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ROCKS and MINERALS

MARCH - APRIL, 1952

A Magazine for
Mineralogists,
Geologists and
Collectors

Official Journal
of the
Rocks and Minerals
Association

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Whole No. 227

Vol. 27, No. 3 - 4

46th LIST OF FINE MINERALS

AZURITE, Laurium, Greece. Minutely xld. on rock, bright blue. 3½x2½ . $ 3.50
ANNABERGITE, Annaberg, Saxony. Incrustation on rock. 3x2 ..... 1.50
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COERULEOLACTITE, Chester Co., Pa. Blue crusts on white mass. 2x2x1½ 5.00
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COVELLITE, Butte. Nearly pure xlline. mass. 3x2x1½ 2.00
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WAVELLITE, Co. Cork, Eire. Mammillary xlline. mass, light green. 4x3 .. 3.00
CHALCOPYRITE, French Creek, Pa. Skeletal xls. w. Pyrite xls. on rock. 2½x2½x2. $2.00. Another, extremely fine. 5x4x3. 2¾ lbs. 12.50
ZINCITE, Franklin, N. J. Almost pure xlline. mass. 4x3x3. 4¼ lbs. 12.50
CALCITE, Cumberland. Fine mass of xls., in part tinted red, on Hematite. 8½x7x3½. 6 lbs. An excellent "old-timer" for display. 22.50
COPPER, Michigan. Well xld. mass. 4x2x1½ 6.00
MOLYBDENITE, Tilly Foster, N. Y. Plates in Serpentine. 3x2 ..... 1.25
MOLYBDENITE, Ontario. Solid mass showing crude xl. faces. 5x3x1. 16 ozs. 7.50
FLUORITE, Alston. Group of large lilac & yellow xls. 4x4x2. Good. 6.00
FERBERITE, Nederland, Colorado. Xld. on rock. 3x2x1½ 2.50
ARSENIC, Freiberg. Hemi-spherical mass. 2½x2x1 ..... 2.50
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TRIPHYLITE, New Hampshire. Blue xls. in matrix. 3x2 ..... 2.50
ANTLERITE, Chuquicamata. Fibrous lline. with some rock. 2x1½x1½ .. 2.50
MANGANOCALCITE, Nagyag. In pinkish stalactites on rock. 3x3 ..... 3.50
LAZULITE, N. Carolina. Blue xlline. masses in Pyrophyllite. 4x2x1½ ... 2.50
TETRAHEDRITE, Kisbánya. Xld. on Sphalerite. 2¼x2¼ 3.00
RAMMELSBERGITE, etc., Cobalt, Ontario. Section of vein, polished. 3x2 5.00
LEAD, Langban, Sweden. Masses on rock. 3x1¾ 4.00
COLUMBITE, South Dakota. Xlline. mass. 4x2x2. 2½ lbs. 7.50
CERVANTITE & BISMITE, Tasna, Bolivia. Earthy mass. 3x2x1½ 2.50
PLATINUM, Ural Mts. ⅝" nugget showing crude xls. 6 grams. 30.00
DIOPTASE, Tiger, Arizona. Micro. xld. on rock. Very good. 3x2 ..... 7.50
AZURITE & MALACHITE, Helvetia, Arizona. Minutely xld. mass. 3x2½x2½ 3.50
CERUSSITE, Leadhills, Scotland. Xld. mass. 2½x1½ 2.00
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WILLEMITE, Tiger, Ariz. In micro. xls. investing WULFENITE. 5x3x1¼ 8.00
HESSITE, Romania. Well xld. w. Quartz xls. 2x1½ 15.00
CHONDRODITE, Tilly Foster. Opaque bright orange xls. in rock. 3x2 ... 3.50

HUGH A. FORD

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No lists furnished, but inquiries for specific minerals welcomed.

ROCKS and MINERALS

PUBLISHED
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Edited and Published by
PETER ZODAC

MARCH - APRIL
1952

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CHIPS FROM THE QUARRY

A SPECIAL INVITATION TO THE EDITOR!

Dear Mr. Zodac:

The Convention Committee of the Rocky Mountain Federation of Mineral Societies invites you most heartily to attend the June 26-29, 1952, Convention in Canon City, Colorado. If you will indicate your desires we shall make hotel reservations for you and plan to meet you at the railroad station if you come by rail. If you drive, the latch string of the Convention is out to you twenty-four hours of the day.

You are the Godfather of the Canon City Geology Club in many ways. This Club was organized in the winter of 1927-1928 and almost immediately upon its organization you invited the Club into the Rocks and Minerals Association and we appreciate it more and more as your magazine grows. We count our blessings during the years and your support heads the list. You printed our first articles and even solicited the meager stuff which made us feel professional and made us climb the mountains higher and higher for more rocks and more articles for ROCKS AND MINERALS.

Personally I feel that without your presence at this Convention, the cornerstone of the structure would be missing. Will you come?

F. C. Kessler, Secretary
Rocky Mountain Federation of
Mineral Societies
Canon City, Colo.
Feb. 14, 1952.

EDITOR'S PROPOSED 1952 TRIPS

This year (1952) may be a very busy one for the Editor of ROCKS AND MINERALS if he will make the many trips outliner for him. Among the trips scheduled for the year are: to Kittery Point, Me., to visit Mr. and Mrs. Stephen Blake, two very nice people and ardent collectors; to Perkinsville, Vt., to visit Harold C. Patch, a subscriber who has planned a trip to an important copper mine; to Syracuse, N. Y., to visit Mr. and Mrs. R. L. Sylvester, two very good friends and ardent collectors; to Keeseville, N. P., to visit Wm. Ellsbury, another active collector whom R. L. Sylvester calls "The Mayor of Paradise Park"; to Niagara Falls, N. Y., to visit W. A. Scotchmer, an amateur lapidary; to Toledo, Ohio, to visit Mr. and Mrs. C. O. Gettings and the newest addition to their family, little Celeste Colleen; to Ishpeming, Mich., to visit Robert Markert, who has a cabin on Lake Superior reserved for him; to Kansas City, Mo. ,to visit Mr. and Mrs. John McCarty (Mrs. McCarty is an active collector); to Washington, D. C., to visit Mr. and Mrs. John Tobin (Mrs. Tobin is a cousin of the Editor). And in addition, a trip to Canon City, Colo., to attend the Convention of the Rocky Mountain and the American Federations of Mineral Societies. This Western trip will be made by plane to Des Moines, Iowa, thence by train to Omaha, Nebr., Cheynne, Wyo., Denver, Colo., to Canon City. Then if time permits, after the Convention is over, he may head for Puyallup, Wash., by way of Salt Lake City, Boise, Idaho, and Portland, Ore. If time is limited, after the Convention is over, the Editor may head eastward by way of Fargo, N. D., St. Paul, Minn., and Milwaukee, Wisc.

These trips look very good and most tempting but how many can be made? The Editor is so swamped with work that it is most difficult to get away for even ONE day and the above trips would surely take two months. Only one of them is certain — the one to Washington, D. C, — the others are all doubtful!

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ROCK COLLECTING IN THE ANTARCTIC

By M. L. PETERSON, Lt. SC. USNR
933 North Longfellow, Arlington, Virginia

Rock collectors are tough and durable. They have to be if they wish to enjoy their hobby to the utmost. I've always been content to let my neighbors spend their time listening to radio quiz programs while I spent mine giving boulders a working over with a sledge hammer. I'm aware that you don't win the $32,000 radio prize unless you are on hand to answer the telephone, but what do I want with seven Russian wolf hounds, a course in beauty culture, an ermine wrap (worth $7,000), a castle in Spain, 5,000 cans of split pea soup, and assortment of other needless prizes!

All I've ever wanted, in addition to what I already had, was a new rock field to conquer. And I wasn't listening to any radio quiz program when the chance came my way. When I call it "a new rock field" I feel guilty of understatement. How many rock collectors have had the opportunity of prospecting in the Antarctic?

How many rock collectors have had the opportunity of testing cold weather clothing never before worn by man? But here we are getting ahead of our story which begins on a sweltering day in August, 1947.

I was happily plugging away at my work in the Bureau of Supplies and Accounts in the U. S. Navy Department when my immediate superior called me in and informed me that I had been given a rare assignment. As I listened to him I felt very much as a radio fan would if he hit the jack-pot, stopped the music, and answered the $64 question all with one word.

I was to be the lucky recipient of a cruise to the South Polar Area, that I was to travel almost 30,000 miles through all the climatic zones known to man, was to be given the privilege of testing cold weather clothing until I turned blue and was to be allowed to rummage around in the ice and snow of Little America III hunting for some chow that had been left there several years before. "And the best part of it is," he said, "you won't have to pay a cent for this trip, the government foots the bill." The thermometer stood at 92 in the outer office but already I was having chills.

After six weeks of frantic scrambling to get the necessaries of an expedition together (I was Staff Supply Officer) we boarded a train for the West Coast. About the 20th of November we set sail for Samoa. As soon as we cleared the harbor the little icebreaker, with a hull as round as a barrel, began to roll and continued to do so until we tied up to the fueling dock in Tutuila. During the two years I had been ashore I had lost my sea legs, and sea stomach too, and I found myself calling for O'Rourke—over the rail. However, after two or three days the pickle cure seemed to work and my internal discomfort subsided. This cure, if you are curious, consists of "smoking" a sweet pickle continually in the manner of a cigar. Some people eat apples, seabiscuits or suck a lemon. I prefer the pickle.

At Samoa we had a rendezvous with the other icebreaker which was to go with us and after three days of fueling and taking on last minute supplies we shoved off for Scott Island. As we approached the "Roaring Forties" we rolled 20 degrees, as we entered the forties we rolled 30 degrees and before we left them we were continually rolling 35 to 45 degrees and for a record listed to 51 degrees at

which time your author cracked his head on a steel bunk after sliding halfway across the beam of the ship. By this time, however, I was so seasick I didn't even feel the bump and wouldn't have cared if I had felt it. (See Fig. 1)

On December 14 we sighted our first iceberg at 60 degrees South. We entered the icepack the next day and by the 16th of December were stuck in the heavy ice still many miles from Scott Island. We were forced to turn back northward to open water and give up our attempt to reach this island. This was very disappointing to us rockhounds since we were very hopeful of getting some rock from this famous location.

For over a week we sailed along the edge of the ice pack until we had gone far into the Indian Ocean Antarctic Basin We turned into the icepack at about 93 degrees East longtitude and fought our way to within about fifteen miles of Haswell Island. Here we nosed into the solid bay ice and put a party ashore to survey the Island. My primary duties lay on the ship and room in the ice vehicles was at a premium so I was unable to go ashore but contented myself with visit on skis to the penguins which flocked onto the ice around the ship.

Haswell Island

The little fellows were most friendly and had a very highly developed sense of curiosity. They had a language of their own too and talked to us in raucous squawks. There were hundreds parading around the ice since we were lying on one of their main "roads" from their nests on Haswell Island to the edge of the ice where they fished for the small red shrimp which forms the bulk of their diet. (See Figs. 2 & 3)

After the return of the party I was able to secure some specimens of the rock they had found on the island. The country rock of the island was coarse grain dark gray gabbro. In addition I got some biotite granite which had been removed from a glacial drift boulder. While the

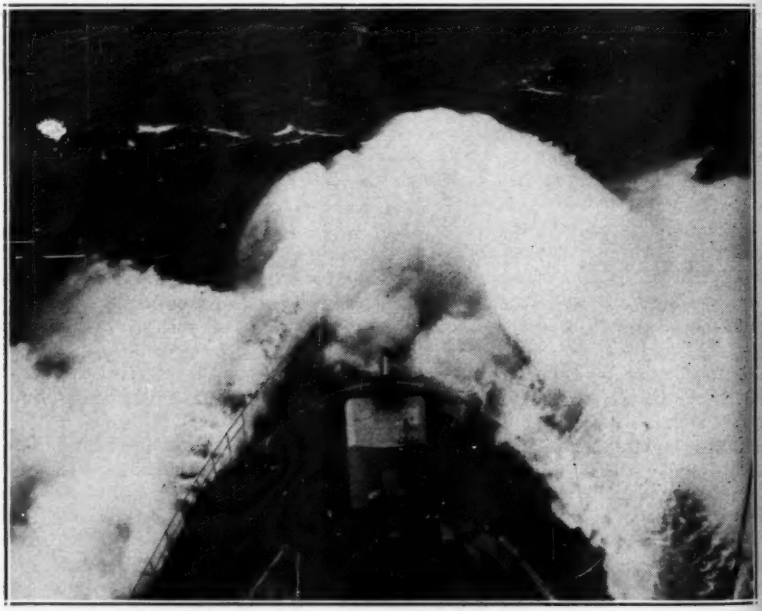


Figure 1 U.S. Navy Photo
Water breaks over the bow of the Burton Island as she fights her way through heavy seas in the "Roaring Forties."

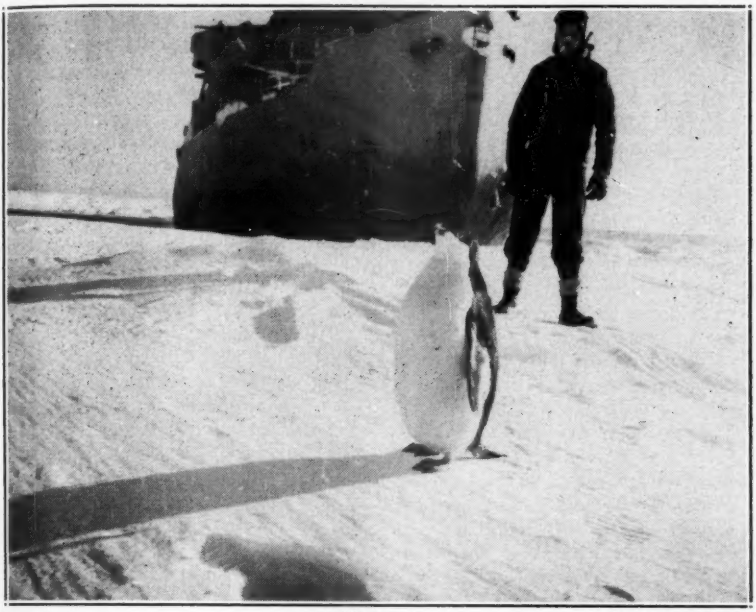


Figure 2 U.S. Navy Photo
A penguin paying a visit to the USS Burton Island while she lay to on the edge of solid bay ice off Haswell Island.

Figure 3 U.S. Navy Photo
Penguins taking to the water from pack ice.

boys were ashore I had suffered acutely with visions of them shoveling up garnets by the bushel so it was rather a relief to find that nothing in the way of gems existed there.

Burton Island Rock

When all was secure we turned eastward and again skirted the ice pack where possible until we reached the vicinity of the Shackleton Ice Shelf, which is a gigantic peninsula of solid ice four to six hundred feet thick jutting out into the Antarctic Ocean from the continent. At the edge of this shelf on January 1, 1948, we discovered a small rocky island which did not appear on the charts and we named it Burton Island Rock in honor of our flagship the Burton Island.

Exploration of the island proved it to be of augen gneiss with dikes of pegmatite rock. I was able to secure several nice samples of each for my cabinet. This augen gneiss was a very fine formation with pronounced "eyes" lying in the matrix.

Bunger Oasis

Continuing eastward we sent a party by helecopter to the "Oasis" which had been discovered from the air the year before and which now bore the name Bunger Oasis after the navy pilot who had first seen it. This area proved to be ice free with unfrozen lakes and much exposed rock. Here the party found epidote, garnet in gray granite, gray granitic gneiss, black basalt and reddish granitic gneiss. Again, through the thoughtfulness of the Chief Geologist, Dr. Apfel, I was able to secure specimens for my collection.

Unnamed Island Off Knox Coast

After sailing eastward for several days we came upon a group of ice-free rocky islands lying off the Knox Coast and on the 19th. of January I got ashore for my first real rock hunting trip. (See Fig. 4) In a glacial moraine area I found more than two dozen varieties of rock including many showing interesting ice erosion and some containing garnet crystals not of gem quality. Among the specimens I was able to collect here were hornblende granites, gray and pink granites, lit-par-lit gneiss, a beautiful glacial

Figure 4 U.S. Navy Photo.

Air view of the rocky islands lying off the Knox Coast which was first explored by personnel of the Second Antarctic Development Project. Burton Island at anchor in foreground.

cobble of porphyritic gneiss containing garnet, epidote from a large vein which ran up one side of the island, gray granite which was a country rock, an epidote contact which shows a "slickenside" due to faulting at the vein, black basalt cobbles scratched by the glaciers, pebbles formed by glacial action, gravel formed by the action of ice and many other interesting forms.

Ross Island and Mt. Erebus

On the 20th of January we set sail for the Ross Sea area and McMurdo Sound which lies around Ross Island on which is located Mt. Erebus the best known active volcano in the Antarctic. As we entered the Ross Sea we encountered head winds ranging up to 30 miles per hour. Spray continually swept the fore part of the ship and since it was much below freezing, the forward parts of the ship were soon encased in an ice mantle festooned with lace-like edges of icicles. (See Fig. 5). These were the perfect conditions under which to test some of the gear I brought for experimental purposes. Soon one of my storekeepers and I were encased in outlandish garments and were standing on the forepeak of the ship exposed to the wind and chilling water. Before long we were cool; some time later, cold; and a little after that, practically frozen. That was when the experiment ended and we hurried below to thaw out.

After about a week of fighting headwinds and snow squalls we entered McMurdo Sound. I shall never forget the scenes of utter grandeur which met our eyes. The sound was as smooth as a highly polished floor. Rising up to our left was the majestic bulk of Mt. Erebus, her summit some 13 thousand feet above us. To our right at a distance of about twenty miles lay a stupendous range of snow covered mountains among them the perfect cone of Mt. Lister many thousands of feet high. About a mile ahead of our ship we could see a thin white line stretched from shore to shore—solid bay

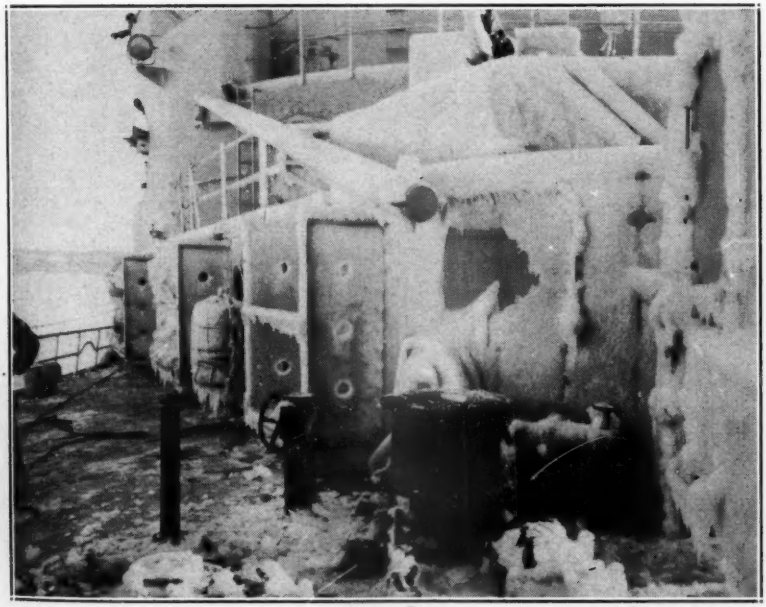
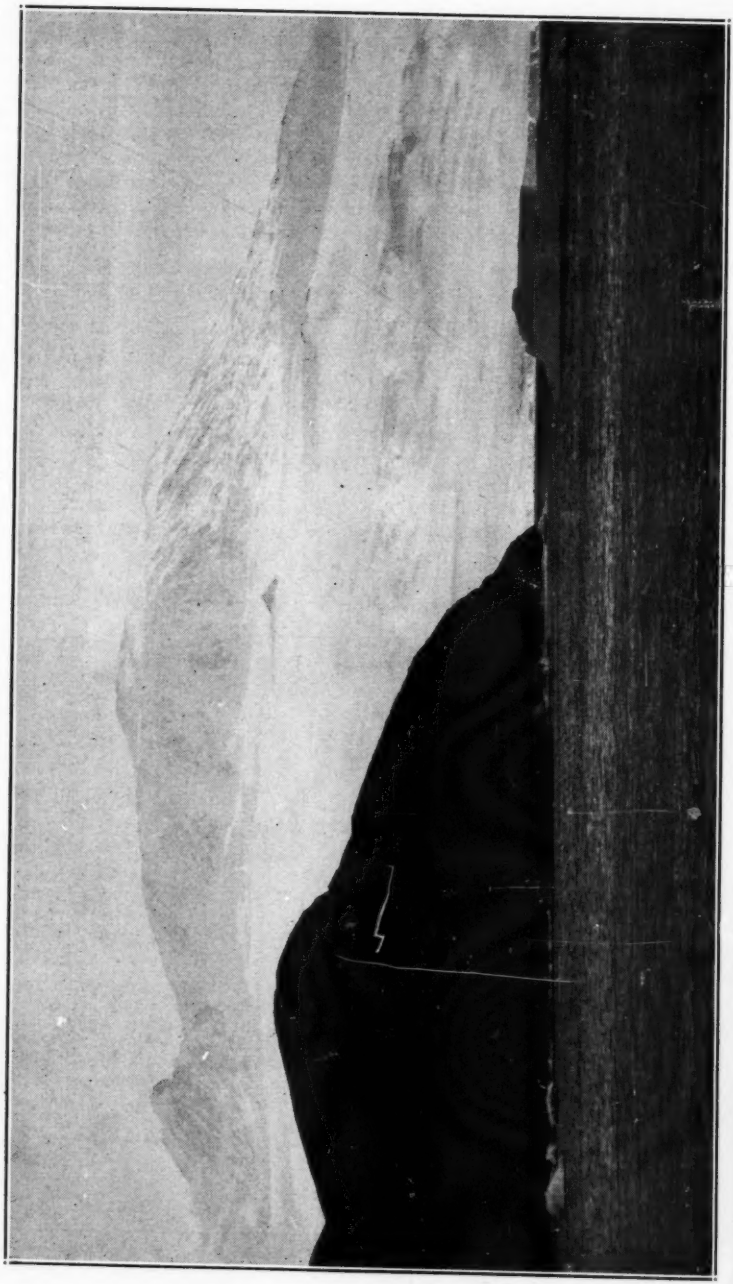


Figure 5 U.S. Navy Photo
The ice mantle which formed on the fore part of the Burton Island when spray carried by head winds froze on the ship.



U.S. Navy Photo

Figure 6

Mt. Erebus, Scott Island, only known active volcano in the Antarctic.

ice. Along the edge of the ice we would see, here and there gigantic triangular fins appear from the water and then sink back into it. These were killer whales, the most ferocious animal on the face of the earth, hunting a breakfast of penguins or seals which might be unlucky enough to be in the water at the moment.

It was a rare occasion, the summit of Mt. Erebus was clear of clouds and from the crater issued a giant irregular column of white smoke and steam. The top of the cone was only clear for about ten minutes but our photographers were able to get some of the best pictures of the volcano ever filmed. (See Fig. 6)

A closer inspection of Ross Island's coast line revealed an escarpment of red rock cut with gashes of darker hue. This I determined to see and when a shore party was formed by Dr. Apfel to collect geological specimens I joined it and was off on what proved to be a very fruitful collecting trip. Here, at the base of the volcano I found lava of many forms, tuff of two forms, one containing fragments of obsidian, and black basalt containing vesicles formed millions of years ago by volcanic gases. I also found sanidine feldspar in black basalt and from a giant escarpment of volcanic dust I obtained samples which were the nearest thing to soil which we found in the entire area explored. And after many hours of hunting I found two treasures — volcanic bombs, the only two found here. These were formed when the volcano blew molten lava into the air to such a height that in falling they formed ball-like shapes and cooled before hitting the ground so that their shape was preserved.

Peter I Island

After we returned to our ship we set out for Little America on the Bay of Whales. In several days we reached our objective (See Fig. 7 & 8) and spent some time on the ice at our assigned duties. After our assignment was completed here we set sail northward to miss the heavy pack ice and then in open pack

Mt. Erebus, Scott Island, only known active volcano in the Antarctic.

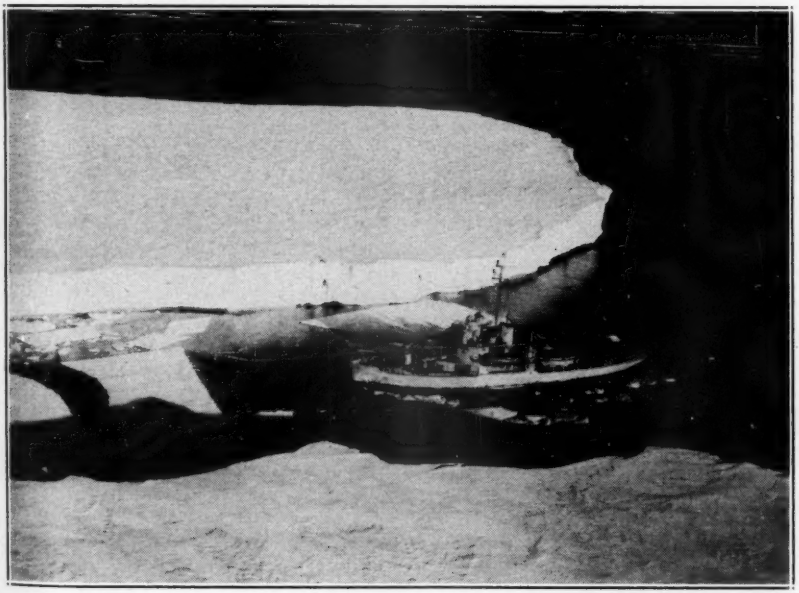


Figure 7 U.S. Navy Photo

USS Edisto entering the Bay of Whales near Little America.

headed eastward. After a few hours of rough going we encountered solid pack (See Fig. 9) and altered our course toward open water. After several days of attempting to touch the coast to the eastward of Little America we gave up and headed eastward at the edge of the pack. Early in February we reached Peter I Island and sent a shore party to look over a beach. They returned to say that a Norwegian ship had called only five days before and left a note to that effect. With them they brought lava and black basalt samples of which, I was able to procure for my cabinet.

Stonington Island

After lying at anchor for a few hours we again got underway on an eastward course and on the 19th. of February we entered Neny Fjord lying on Marguerite Bay. Here we met, at Stonington Island, the Finn Ronne Expedition and members of a permanent British post. We had a great time visiting and swapping yarns. Stonington Island was a rock hound's dream. Here was an ice-free beach consisting of glacial drift material of infinite variety and form. Glaciers had for eons scooped up rock from the surrounding lands and deposited it on the little island

Figure 8 U.S. Navy Photo

The USS Burton Island moored to the solid bay ice in the Bay of Whales. Loose pack ice in the foreground.

broken up into sizes convenient for collecting. Further action of moisture in the rocks had split them up into perfect cabinet specimens. On this one beach I was able to find over sixty varieties and phases of rock. Among the outstanding varieties were biotite gneisses, diorites with veins of epidote and granite, epidote crystals on diorite, granites of all colors and grains, schists weathered to the most fantastic forms and glacial cobbles and pebbles showing differential weathering and ice erosion. I spent two full days combing the beach for new varieties and my collection grew by many pounds. On 21 February we broke the Ronne ship out of the ice and took her in tow. That evening we lay to in the ice pack and waited for our sister to escort a British relief vessel back to Stonington Island with supplies for the men who were to spend the long night.

Adelaide Island Rocks

The next day a shore party was formed to explore the rocky islets lying south of Adelaide Island. We secured use of the Greenland cruiser, a small deisel powered boat of about forty feet with comfortable cabins and, best of all, an oil cooking range. We set out equipped with two cases of grub and a case of cold drinks. We carefully threaded our way through

Figure 9 U.S. Navy Photo

Port beam view of the USS Burton Island breaking through heavy pack ice en route to Peter I Island.

the ice pack, a piece of which could have wrecked us, for some thirty miles until we came to a small rocky islet. Here we found the country rock to be argillite with some conglomerate. Here also, was the home of hundreds of penguins and cormorants. Hard work with the geological hammers produced specimens of the argillite and conglomerate. As we were proceeding with the examination of the island we came upon something which we considered to be of great importance —we found traces of a fossilized tree trunk. As far as we know we were the first to find fossils in this area. Actually, I believe we were the first to ever set foot on these islets.

After two hours on this island we proceeded to another half a mile distant. It also proved to be largely of argillite. Up one side ran a vein of quartz and epidote. A few ounces of TNT produced for us several nice specimens of this vein rock. In addition, glacial pebbles were found in a small rocky gully. This island too was the home of cormorants and penguins. After another couple of hours search for fossils which proved unsuccessful, we set sail and set a course toward the ship lying some thirty miles over the horizon. The clock stood at 8:30 P. M. when we started back toward the ship and the sun was shining very brightly over the ice field. Off to our stern lay the cold moun-

Figure 10 U.S. Navy Photo

Headed for home after four months in the ice.

tainous wastes of Adelaide Island and far off to port the ranges on the Palmer Peninsula lay in a tumbled white mass along the horizon. It was a scene which few have been fortunate enough to see and which we shall never forget.

Heading For Home

We arrived back at the ship at about 10:30 and after a warm shower "hit the sack." The next morning we weighed anchor and set a course to take us out of the bay and then altered it to due north (See Fig. 10) Again we encountered rough weather in the forties and for a week we rolled between 35 and 45 degrees. We had to wedge ourselves in our bunks and eat from a plate held in hands while in the Wardroom. When we reached the thirties we were beaten to a "frazzle" and the smooth, blue waters of the Humboldt Current were a welcome sight. About the 7th. of March we stopped at some small rocks lying far off the coast of South America for a try at some fishing. Our luck was excellent and several "whoppers" were taken. After scrubbing and painting up the ships we proceeded northward and on the 12th of March entered Callao the port of Lima, Peru. Here we enjoyed the hospitality of a friendly people for five most interesting days. The shops of Lima, loaded with native silver and leather work, were a constant source of pleasure. The wines and foods were another. With champagne selling for the equivalent of 80 cents a bottle in the best hotels, who couldn't have fun?

After five days of shore leave we shoved off for Panama. Four days later we entered the Canal and on the 27th of March tied up to the dock in Norfolk, Virginia. We had come into the harbor just at dusk and tied up to the dock after dark. The reunion with our families was indeed a joyful one. We had been gone over five months and most of this time we were out of contact with them by mail. We were allowed one radio gram a month during the four months we were in Antarctic waters.

Now, in my collection of Antarctic rocks I have many nice specimens which represent the geological structure of one of the most remote areas in the world. I shall treasure these mementos in the years to come for they will always be a reminder of one of the most interesting adventures of my life.

LIST OF ROCKS FOUND

Haswell Island

Coarse grain gray gabbro.
Biotite gneiss from a glacial drift boulder.

Burton Island Rock

Augen gneiss country rock,
A porphyritic dike rock.

Bunger Oasis

Red granitic gneiss.
Fine grain gray granite.
Hornblende granite.
Black basalt.
Epidote.
Garnetiferous gray granite.

Unnamed Islands off Knox Coast

Gray granite.
Hornblende granite with pink feldspar.
Epidotized pink granite.
Striated black basalt cobbles.
Black basalt.
Hornblende.
Black basalt with white feldspar inclusions.
Diorite.
Red granite glacial pebbles.
Lit-par-lit gneiss.
Fine grain pink granite.
Glaciated gneiss pebbles.
Striated diorite pebbles.
Pink granitic gneiss.
Garnetiferous porphyritic gneiss.
Vesicular black basalt showing extreme ice erosion.
Gray granitic gneiss pebbles.
Micaceous granite.
Hornblende granite with epidote contact.
Glacial sand.
Glacial gravel.

Ross Island and Mt. Erebus

Vesicular black basalt.
Brown lava.
Ferruginous lava.
Lava showing efflourescent salts.
Two volcanic bombs (rare here).
Sanidine feldspar in brown basalt.
Sanidine feldspar in black basalt.
Fine grain tuff containing bits of obsidian.

Coarse grain tuff.
Volcanic dust.

Peter I. Island

Black basalt.
Ferruginous lava.

Stonington Island

Pink granite showing epidote contact.
Fine grain diorite.
Fine grain diorite with epidote veins.
Greenish trap rock.
Weathered schist cobbles.
Porphyritic basalt.
Argillite.
Multicolored conglomerate.
Granite.
Porphyritic diorite with feldspar veins.
Chlorite schist showing folds.
Coarse grain diorite showing epidote contact.
Granitic gneiss.
Oxidized dolerite.
Porphyritic diorite.
Gneiss showing ice erosion.
Glaciated pebbles.
Porphyritic granite.
Diorite with granite dike.
Felsite.
Gneiss showing differential weathering.
Vesicular greenish basalt.
Black basalt.
Two feldspar granite.
Dolerite with quartz vein.
Fine grain granite with epidote contact.
Dolerite with epidote vein.
Fine grain granite with pyrite modules.
Porphyritic felsite.
Porphyritic green basalt.
Porphyritic basalt cobble with granite vein showing extreme erosion.
Azurite and Iron oxide on granite gneiss.
Biotite gneiss.
Biotite gneiss with aplite vein.
Biotite schist with fine granite vein.
Biotite granite with epidote contact.
Granitic gneiss with oxidized pyrites.
Diorite with granite vein.
Epidotized granite.
"Bull" quartz in schist.
Gneiss with epidote contact.
Fine grain diorite with quartz vein showing differential weathering.
Garnetiferous gneiss.
Trachyte.
Coarse grain diorite with intrusion of coarse grain diorite.
Quartz with chlorite.
Siliceous gneiss.
Glacial pebbles of diorite.
Gneiss with pegmatite granite intrusion.
Fine grain diorite with garnet and oxidized pyrites.
Hornb'ende gneiss with quartz veins.
Granite showing contact with quartz vein.
Granite cobble with apatite vein.
Andesite.
Fine grain gabbro.
Quartz cemented breccia.
Rhyolite.
Epidote crystals on diorite.

Adelaide Island Rocks

Argillite.
Fine grain conglomerate.
Coarse grain conglomerate.
Fossiliferous argillite.
Quartz and epidote dike rock.

COMING EVENTS

TEXAS MINERAL SHOW
Municipal Auditorium
Fort Worth, Texas
May 2-4, 1952

CALIFORNIA FEDERATION CONVENTION
Angels Camp, Calif.
June 20-22, 1952

MID-WEST FEDERATION CONVENTION
Macalester College
St. Paul, Minn.
July 1-3, 1952

ROCKY MT. FEDERATION CONVENTION
AMERICAN FEDERATION CONVENTION
The two Federations will team together for one gigantic Convention in Canon City, Colorado.
June 26-29, 1952

NORTHWEST FEDERATION CONVENTION
College of Idaho
Caldwell, Idaho
Aug. 23-25, 1952

A SUBSCRIBER CRITICISES ROCKS AND MINERALS

Editor, R & M:

I am enclosing $3.00 to pay for one year's subscription (renewal) to ROCKS AND MINERALS. Like practically all Westerners, I would like to see more about Western localities. However, the other Mineral Magazines have little about Eastern localities, so that this is about the only way that we can learn about Eastern minerals. There is one thing that I believe that most of your readers do not care for and that is the minute detail, by the minute and small fractions of miles used so many times in telling of an otherwise interesting trip. I presume that it is done primarily to fill up space, but most of it calls for waste of time in reading a lot to learn a little.

I take four mineral magazines and I believe that more space is wasted in ROCKS AND MINERALS than in all the others put together.

And believe it or not, while I do NOT collect sands, as such, I get more out of the department than from any other single department. I have exchanged garnet sands with quite a few and I believe to our mutual advantage.

I was not at all surprised to read that California leads all of the States on your subscription list. When English put out his book, "Getting Acquainted with Minerals", John Melhase had told him that he had not paid enough attention to the Western minerals and Mr. English laughed and said that he did not write the book for the West, only for the East. During the first three years 80 per cent of all sales of that book were made in the three Western States.

Well! As you cannot please everybody I suppose that we will have to put up with what you in the East are willing to feed to us, or quit subscribing. Apparently there are some people who, not knowing anything different, think that ROCKS AND MINERALS is perfect.

Chas. S. Knowlton
Jan. 30, 1952. Fullerton, Calif.

REPLY BY THE EDITOR

"I have received a number of letters from Western readers somewhat similar to that above and it is about time they were answered in the magazine. Like all good Westerners, Mr. Knowlton is interested chiefly in Western minerals but a true mineral collector's interest should be world wide. I know Mr. Knowlton is a garnet specialist and I am willing to bet my shirt (a clean one of course) that his specimens come from all over the world and not from California alone.

"A magazine has to be printed somewheres and because I was born in the East (in Peekskill, N. Y., to be exact) and have lived here all my life, it stands to reason that the magazine would be printed in the East and my personal articles would be on the East because I am personally familiar with Eastern minerals and their localities. ROCKS AND MINERALS circulates in every state in the Union and in many foreign countries and we welcome articles from each and every state and country. We have printed articles on every state in the Union but to assure that no state would now be neglected in an issue, our "World News" department has been established in which in each issue each state has at least one mineral mentioned. Some states get lots of publicity while others very little and this is because of the poor support we are receiving from readers in those states, even though we have subscribers in them. Take North Dakota, for example. We haven't received even one short note from any of our readers in that State, not even from the State Geological Survey whom we petitioned. Our files and sources of information are now almost exhausted and I may have to make a special trip to North Dakota this summer in order to dig up a few minerals so that the State may be represented in future issues. Surely some minerals must be found in that State — it can't be all farm land?

"You state, Mr. Knowlton, that more

space is wasted in ROCKS AND MINERALS than in all the other mineral magazines combined that you subscribe for. This may be true from your standpoint but to our many readers this seems to be an asset. This refers especially to the mileages which appear so often in my personal articles. I will tell you how this started.

"In 1948 I made a trip to Mexico with my good friend, Don Gabriel of Detroit, Mich. We went in his car, were gone 23 days, many localities were visited and many minerals collected. As an experiment I wrote up the trip in an entirely different way and for the first time the mileage was featured. The article, in 4 parts, appeared in the May-June, July-Aug., Sept.-Oct., and Nov.-Dec., 1949, issues. The results were simply astounding. Favorable comments by the hundreds poured into the office, personal letters, notes attached to renewals or orders for books or back number, telephone calls, personal congratulations from readers met on field trips, club meetings, etc. To be honest with you more favorable comments have been received from that one series of articles alone than from all the previous good articles grouped together since the magazine made its first appearance. Wouldn't this indicate that readers liked this style of article? Every article of mine since then in which the mileage appears has gone over big with readers. It is not my writing that goes over (I am a poor writer as you know) but it is my willingness to share a trip with others which makes the hit. Many collectors, judging from letters received, have made the trip also, following my itinerary and they could hook on most anywhere — at a city, a county line, or important crossroads. In other words my articles blaze a trail for many collectors who seem to enjoy this feature. Another fact which you probably overlooked entirely is that many of our readers are rank beginners who do not know what sandstone or limestone or slate looks like. These readers may often travel many miles to go over even a part of the trip because "300 feet from a county line on a known highway is a fine exposure of red standstone" or something similar. Often the dimensions of the outcrop are given and minerals found are described. Thus for the first time these beginners may actually see a sandstone or limestone or slate outcrop, identified and located for them by the Editor of ROCKS AND MINERALS. They appreciate these location and I am sure you would too if sometimes a garnet occurrence could be noted in an area hitherto unknown for the mineral.

"Speaking of waste space, have you noticed the abundance of addresses in each issue? Almost every article, World News, the Sand Collector, Club and Society Notes, all are heavily loaded with addresses. Where no address appears under an article it is because the author did not want it to appear. These addresses take up space but they are printed for the benefit of our readers who deeply appreciate this service. The World News and the Sand Collector are most popular features because, due to the many addresses given, readers can correspond with collectors mentioned. I love minerals and want to share this love with others — hence the many addresses you see throughout the magazine. What other magazine does this for its readers?

"I have received many curious complaints from collectors. Some have written: 'If every collector in the country subscribes for ROCKS AND MINERALS then I, too, will subscribe'. Some complain the magazine is too elementary or too technical, or it carries too many advertisements. Many Westerners do not like it because it is an Eastern magazine and strange but true, many Easterners do not take it because they want a Western magazine. Boiling it all down, all these are trying to find an excuse for not subscribing, because apparently, they love their money more than they love minerals.

"Yes, California does lead in the number of subscribers and in advertisers, too. These subscribers and advertisers are mighty nice people and generous to a fault. If I did not have the generous support of Californians, ROCKS AND MINERALS would go out of existence. I am deeply indebted to my Californian friends, a number of whom I know personally.

"Your last paragraph, Mr. Knowlton,

not fair. You seem to indicate that space to Western localities is grudgingly given. This positively is NOT true. I am not only delighted to print Western articles but encourage more of them as it is a pleasure and a privilege to do so. Let us take your State for example. If you feel that not enough articles on California are appearing in ROCKS AND MINERALS compared with the large number of subscribers, then the fault lies with the California subscribers — they are not sending us enough articles. From my personal observations during the past 15 years, Western collectors are not only most reluctant to write articles but dread to give much information on Western localities — there is a fear in their minds that someone with trucks will visit the spots and clean them out. I know this for a fact because collectors petitioned for articles have written me so. So I don't think it is fair for Westerners, after erecting a barrier or "Iron Curtain" (a popular term these days) around their mineral localities, to criticise, condemn, or throw into my face that because ROCKS AND MINERALS is an Eastern magazine it will not print much on Western minerals. Eastern collectors, on the other hand, are not only most anxious to write articles but maps, diagrams, and even mileages are given so that the localities described may be reached easily. The heads of our various departments are all Easterners as follows: Micro-mounter (Yedlin of Conn.) Mineral Shoppers Guide (Thomas of Penn.), Lapidary (Sinkankas of Virginia); Collector's Column (A.C.L. of Penn.); World News and Sand Collector (Zodac of N. Y.) Yedlin, Thomas, Sinkankas, and A.C.L. all volunteered their services — not a one was petitioned.

"May I point out to you that very few reprinted articles appear in ROCKS AND MINERALS. Practically every article printed so far had been prepared especially for ROCKS AND MINERALS, and they cover localities all over the world, not just the East. Did you notice, for example, that in the 25th Anniversary Number (Sept.-Oct., 1951), California led all States in the number of articles? It had 4 while only 3 appeared for the rest of the nation (N. Y.—1; N. J.—1; Maine—1).

"I hope this reply of mine may smooth out some of the rough spots in the magazine from your point of view. Though most of the articles may or seem to be on Eastern localities, be assured that we are all with you in spirit because mineralogy knows no boundary. A nice mineral from a definite locality in California is just as interesting, just as important, and just as valuable to me as is a nice mineral from a definite locality in my own New York or from any other Eastern State."

Peter Zodac

CORRECTION ON LAFAYETTE, PA.

In the article, 'Lafayette, Pa.,' page 586, in the Nov.-Dec. 1951, issue of ROCKS AND MINERALS, the locality name 'Lafayette' should not have been used. Mr. Harold Poole, expert mineralogist of Miquon, Pa., and expert on the area involved in the article, has advised the writer that there is actually no such place name as Lafayette. There is or was, a Lafayette Hill on the east bank of the Schuylkill River. However, the chief aim of the article, was to draw attention to the road-cut blasting being done on the west bank of the river opposite Miquon, and up and down the west bank for several miles. It would be interesting to hear from collectors who might have investigated new blasts and recent blast and fresh exposures along the west bank, from Conshohocken and as far down river as new exposures may be made. Gordon's Mineralogy of Pennsylvania lists these specimens from the general area opposite Miquon: Soapstone Quarry (opposite Miquon); Hornblende; amphibole asbestus; talc; chlorite; dolomite; breunnerite; corundum; magnetite; ilmenite.

Rose's Quarry; Enstatite; hypersthene; tremolite; amphibole asbestus; serpentine; talc; prochlorite; dolomite; bornite; millerite; aragonite; epsomite neolite (?); genthite, chalcanthite. Almandite garnets from tiny to one half inch or little larger are very plentiful in the region. The garnets are mostly deformed, but many dark brown perfects may be found. An observant collector will find himself walking on garnets in certain spots along the new road-cut. It is doubtful if any of the oldtime minerals may be found in the ancient small quarries opposite Miquon. The new blasts, however, should produce many of the above list.

Chas. A. Thomas

We Like It Too!

Editor R & M:

I like R & M very much and believe it is the best that could be issued.

Bob Barnes
Jan. 3, 1952. Louisville, Ky.

MINERAL COLLECTING (1951) AT CRESTMORE, CALIFORNIA

By PAUL F. PATCHICK

University of California at Los Angeles

The best known mineral locality in California, if not in the whole western United States, is at Crestmore near Riverside, 50 miles east of Los Angeles. Located just 2½ miles south of Bloomington, which is on U. S. Highway 70-99, the limestone quarries represent the third most highly mineralized region in the entire world. Only Langbanshyttan, Vermland, Sweden and the Franklin district, in Sussex County, New Jersey, are able to rival Crestmore's vast assemblage of fine specimens and rare species with their unusual associations. One hundred and twelve minerals have been described to date, not including the twenty-five or thirty new or undetermined minerals, from the extensive contact zones in the crystalline Mississippian (?) limestones. Of the many minerals identified from this intricate maze, nine have been found to be completely new to science, and of these, at least four may be found by the careful collector at their type localities.

More than twenty-five scientific papers have been published concerning the Riverside Cement Company properties at Crestmore, beginning with those by Eakle and Rogers in 1914. All of the published papers have described the minerals in a manner wholly unfamiliar to the average "rock hound," and do not serve to assist the layman with his week-end hobby. Not being accustomed to the crystallographic and optical nomenclature of the professional researcher, the neophyte is satisfied perhaps to wander in utter confusion, knocking about the numerous boulders discarded for cement, wondering "just what to pick up." It is with this thought in mind that the writer attemps to bring the locality up-to-date, for many changes have taken place since the most recent (1941) discussion by Woodford, Crippen and Garner (11).

Those particularly interested in the individual minerals and their paragenesis, and those wishing to study the geology of the area, are referred to the references cited at the conclusion of this paper.

Commercial Quarry

Certain limitations have been placed on the would-be collectors by the Riverside Cement Company in the past several years. Mineralogical societies and school groups may enter just one of the quarries, and then only on Saturdays between the hours of 9:30 A.M. and 3:30 P.M. before 12:00 noon (Jensen's Quarry, to the northwest of Crestmore, is completely closed to collectors, as drilling and blasting are in operation seven days a week, eight hours a day). Of the many excavations, such as the southwestern or Chino hill, the Sky Blue hill, the Lone Star quarry, the Wet Weather quarry (with its deep lake), only the Commercial quarry is open to mineral enthusiasts "for geological study". Permission to enter must be granted by the company at the Personnel Office, and then, upon the signing of a release of liability by the collectors, a guide is assigned to escort the party through the gates to the now idle quarry (since 1927).

Rocks Exposed in Commercial Quarry

The limestone of the Commercial quarry has two distinct facies, one of which is white and locally contains yellowish predazzite (brucite bearing) beds, the other having developed a striking deep blue color. Masses of blue rock fifty feet thick are practically pure calcite, with grains usually 3 or 4 mm., and occasionally 15 to 30 mm. (1¼") in diameter, the latter material suitable for the cutting of spheres. The proximity of the intrustive quartz monzonite (plagioclase equal in amount to the alkali-feldspar) porphyry and its pegmatites undoubtedly provided the temperature and stress relationships necessary for the color change in the limestone (12). This rock was called the Sky Blue quarry limestone by Daly (8), and the collector

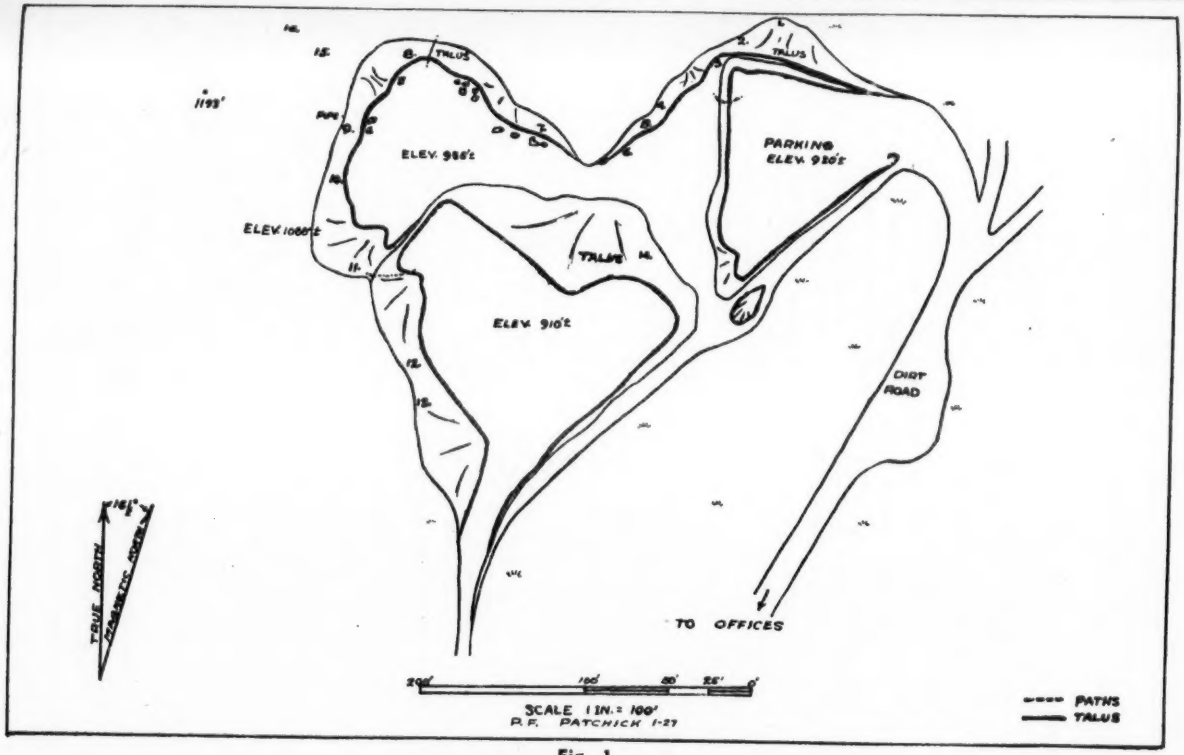


Fig. 1
Map of Crestmore Quarries — 1952.
Brunton & Pace Survey.

will easily see the analogy, once having visited the locality.

Notes on Individual Minerals and their Localities (See Fig. 1)

Station 1. IDOCRASE (VESUVIANITE) xls.

Tetragonal. Prisms rare. Crystals flat, pyramidal up to 3 x 6 inches. Granular massive. Brittle. Vitreous luster. Color green to brown. Streak white. H.-6, 6½. Cleavage not very distinct.

Beautifully shaped crystals occur abundantly in blocks and boulders at base of cliff and up talus slope to station 1, where outcrop may be found. Matrix exceedingly hard, sledge hammers and crowbars used to best advantage here. (9).

Station 2. PYROXENE var. DIOPSIDE xls.

Monoclinic. Complex crystals, usually prismatic, to 1 x ½ inches. Granular, coarse or fine massive. Brittle. Luster vitreous inclining to dull. Color usually green of various shades, varying from greyish white to bright yellow green. Streak greyish green. H., 5-6. Cleavage some times rather perfect.

Outcrop at very top of cliff, being readily accessible by roping-down from top. Matrix very compact. Associated with idocrase.

MICA var. XANTHOPHYLLITE xls. Monoclinic, psuedo-hexagonal plates, not flexible. Vitreous luster. Color pale green, almost colorless at this sta. H., 4-5. Perfect basal cleavage. (One other locality in the world: Ural Mts.)

Associated with fine granular, pale green diopside. Very large cleavages and plates may be collected with aid of rope. Dangerous locality.

Station 3. WILKEITE grains

Hexagonal, but rarely found xlized. Usually wheat shaped grains, or distorted crystals. Vitreous. Color rose red, but this is now very scarce, a commoner yellow variety (?) being rather abundant at present. H., 5.

Found in talus boulders with blue calcite, glassy monticellite, idocrase. Boulders bearing this rare mineral may be recognized on surface by numerous small crystals of crestmoreite, its alteration product (1). It is the only mineral to date with four acid radicals i.e., it is a calcium phosphate-carbonate-silicate-sulphate. (One world locality).

MONTICELLITE grains

Orthorhombic. In small crystals or rounded grains. Brittle. Vitreous luster. Colorless to grey to dark grey, sometimes pale to dark brown. H., 5-5½. Streak uncolored. One perfect cleavage. Occurs in bands with the yellow wilkeite and brownish idocrase. The writer has seen rough crystals up to 20 mm. in size, and with a very dark grey color. Rather abundant in talus slopes. (7).

Station 4. MAGNETITE xls.

Isometric. Octahedral crystals to 5 mm., compact and granular massive. Metallic luster. Color iron black, as is streak. H., 5½-6½. Highly magnetic. Cleavage indistinct. Parting fair.

Occurs in a pegmatite dike up on cliff face.

Station 5. SPINEL xls.

Isometric. Octahedrons, very small, ½ to 1 mm., also rounded grains. Brittle. Sub-Metallic luster, inclining to vitreous. H., 8. Color very dark green, nearly black. Streak white.

Locally peppering wilkeite bearing limestone on talus slopes.

Station 6. Mineral "F" (11)

A secondary mineral, occurring as definitely crystalline blue films coating joint planes of the quartz monzonite porphyry and contact rock at and near quarry face. It is a copper calcium aluminum silico-carbonate occurring in limited quantities. A new, yet undescribed and not fully identified mineral.

Station 7. AMPHIBOLE var. TREMOLITE

Monoclinic. Columnar, semi-fibrous, coarse, rarely lamellar cleavages. Brittle, with fractures across the prisms. Luster vitreous to pearly on cleavages. Color white. H., 5-6. Streak uncolored, or paler than color. One perfect and two sometimes distinct cleavages.

Found in aggregates long and thin columnar in the quartz monzonite porphyry contact rock. Cleavage up to 4 or 5 centimeters long common, but only at this station. This mineral, although of rather widespread distribution elsewhere, is one of the most difficult to find in these quarries.

AMPHIBOLE var. ACTINOLITE

Monoclinic. In crystals, long bladed, or columnar or fibrous types. Color bright green or greyish green. The crystals break easily across the prisms, which have an enlongated diamond-like shape. Otherwise similar to tremolite in properties.

Found sparingly in xls. averaging 5 x 30 mm. in size as a minor constituent of an altered pegmatite. Perhaps a weathering product (?). (on quarry face).

WOLLASTONITE

Monoclinic. Usually cleavable massive to fibrous, fibers parallel or reticulated. One perfect cleavage, two less so. Fracture uneven. Brittle. H., 4.5-5. Luster vitreous. Color white, inclining to grey.

Easily recognized by these features and by the many inclusions of cinnamon colored garnet spotting the many boulders on the quarry floor.

RIVERSIDEITE

Orthorhombic. Fibrous veinlets. Silky luster. Color white. H., 3. Compact masses between idocrase and diopside crystals. Not easily distinguished from the other hydrous calcium silicate minerals which are present elsewhere. (Named for the county in 1917 — a one world locality).

Station 8. HYDROMAGNESITE

Monoclinic. Crystals small, 1-3 mm., tufted. Generally massive, chalky crusts. One perfect and one distinct cleavage. Color and streak white. H., 3.5. Vitreous silky to dull luster.

Alteration of brucite. A rare basic magnesium carbonate.

BRUCITE grains

Hexagonal-Rhombohedral. Waxy, grey grains, 1-5 mm. in diameter. Cleavage perfect basal. Sectile. H., 2.5.

Occurs as alteration pseudomorphs of periclase. If the collector will search diligently, this rare mineral pseudomorph may be found.

Station 9. OPAL var HYALITE

Clear, glassy, colorless, globular like forms 2-4 mm. in diam., some as crusts and coatings on joint planes with a botryoidal surface. Also found in translucent masses coating blue calcite. Highly fluorescent. Resembles droplets of water. Some coating aragonite is tan colored.

OPAL var. "WOOD"

Brownish to black, banded "wood-opal", is found in quantity in crevice below bent pipe, as the replacement of travertine, altered garnet, monticellite and fault-gouge materials. As this material is somewhat brittle, fracturing with a conchoidal break, it is not too suitable for the lapidary's purposes. This locality is very dangerous. A hard helmet of some sort is advisable, and a crowbar is useful here also.

CALCITE xls.

Small scalenohedrons and crusts of whitish calcium carbonate are in profusion here. Much of this is highly fluorescent, and an ultra-violet lamp would be an asset to the collector. The distinction between calcite and aragonite at this locality is hardly worth the effort, as the two are so closely intermingled as crusts and coatings to make separation difficult. Both fluoresce equally well.

Station 10. GARNET var. GROSSULARITE-ANDRADITE xls.

Isometric. Rhombic dodecahedrons (12 faces) common. Also granular massive. Vitreous luster. Color dark red-brown. Streak white. H., 6.5-7.5. No cleavage, but sometimes a distinct parting may be observed. Fracture subconchoidal to uneven. Brittle. In quartz monzonite contact zone.

Abundant in blocks at bottom of cliffs. Garnets manganiferous.

SPHENE-TITANITE xls.

Monoclinic. In wedge-shaped and flattened crystals. Sometimes massive and compact. One distinct cleavage, two

imperfect. Parting may be seen at times. Adamantine to resinous luster. Color brown, yellowish green. Streak white. Slightly transparent to opaque. H., 5-5.5.

Rather scarce in quartz monzonite rock. Cross sections diagnostic in determining this mineral.

Station 11. CRESTMOREITE xls. pseudomorph after WILKEITE xls. (1).

Monoclinic. Fibrous, compact xls. Vitreous to dull luster. Color snow white. H., 3.

Formed as an alteration of wilkeite and also as a direct crystallization, the former being the most rare form. The author has in his collection only three specimens of this unusual mineral type, which was named for the quarries in 1914. Crestmoreite xls. by themselves may be found easily by climbing up the ledge and prying off the blue limestone blocks. Care should be exercised at this spot, for the rocks are highly jointed, and could easily give way at the slightest provocation. If the collector is fortunate, he may uncover these pseudomorphs up to 1 or even 2 centimeters in length, and perhaps 2 to 4 mm. in width.

Station 12. XANTHOPHYLLITE xls. (See station 2b for physical properties.) Crystals here in blue limestone up on ledge above quarry floor. The crystals are a very beautiful dark green, almost black in color at this locality. They are excellently and perfectly formed, some as large as 3-4 cm. in diameter, with a maximum thickness of 2-3 cm. The size varies along the ledge. Some of the crystals do not exceed 4-5 mm., but these are exceptionally well shaped, showing the true color due to their thinness. The larger crystals and groups of xls. are in a matrix of granular, cleavable diopside, but the smaller ones are almost wholly in blue calcite. The larger plates have dull edges, with some xls. being more rounded and smooth than others. A small number of the thicker crystals were observed to show twinning, i.e., reentrant angles, etc. All are well worth the time and effort to dig them out.

Several other intriguing minerals were found at this locality by the author, such as an interesting pseudomorph of a dark brown color and several acicular zeolite like species. However, lack of sufficient material for chemical analysis made the determination almost impossible.

Be sure to include a box with shredded paper, divided into compartments, in your collecting equipment for this particular locality.

Station 13. CALCITE pseudomorph after ARAGONITE nodules.

Peculiarly shaped nodules in a reddish, arkosic (highly feldspathic) sandstone body included in the blue calcite above the quarry floor (elev. approx. 910 feet). Sizes range from less than 1 inch to nearly 6 inches in diameter. The calcite is of a fibrous nature, radiating outward from the center of the heavy balls. These are the first of their type that the writer has seen, and may be classed as a mineralogical anomaly.

Station 14. CALCITE var. AMBER xls. Hexagonal-Rhombohedral. Crystal common up to 10 mm. and cleavages to 2 cm. Radiating prismatic groups of Dogtooth Spar in cavities in blue calcite. Also as incrustations in crevices of old waterways. Cleavage perfectly rhombohedral. Vitreous luster. Amber color. H., 3. Streak white or greyish.

Highly fluorescent and slightly phosphorescent. Undersides of large limestone blocks near 935 foot level thickly coated. A heavy sledge will be of use at this locality.

Station 15. SCAPOLITE xls.

Tetragonal. Crystals prismatic, but more commonly massive granular. Two distinct, but interrupted cleavages. Fracture subconchoidal. Brittle. H., 5-6. Luster vitreous to pearly externally, inclining to resinous; cleavage and cross-fracture surface vitreous. Color white, grey. Streak uncolored. Subtranslucent.

Crystals of a cloudy white appearance may be found in irregular cavi-

ties, along a shattered contact between an offshoot of the quartz monzonite porphyry and blue limestone. They attain a maximum size of 12 to 15 mm. in length, and 5 to 7 mm. in thickness. The matrix of the crystals consists of a fine grained garnet-idocrase rock, with admixtures of spurrite-merwinite-gehlenite veinlets. Found as druses coating microcline, and at some places are small greenish epidote crystals and larger, glassy quartz crystals. Some of these cavities (miarolitic) are as large as 8 to 10 inches in diameter. Many of the fallen blocks can be seen pitted with numerous openings lined with crystals.

Station 16. FELDSPAR var. MICROLINE

Triclinic. Bases of crystals often show rectangular grating structure produced by two series of fine tapering lamellae nearly at right angles to each other. Also massive cleavable, the angle being about 90 degrees. It may be readily recognized by two almost perfect cleavages, one less distinct, and another less easy seen. Fracture uneven. H., 6-6.5. Luster vitreous, sometimes pearly. Color white to pale cream-yellow. Translucent.

Stout, well formed crystals reaching an inch in length may be found in groups and clusters within the numerous float boulders which are so plentiful on the slopes of the upper quarry floors. This level (elev. 1000 feet) may be declared "out of bounds" for the collector, but even then, a wealth of unusual minerals still awaits the enthusiast in the extensive lower workings of the quarries. Good luck, and happy hunting!

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A Friendly Influence!

Editor R & M:

A friend showed me a copy of your Sept.-Oct.. 1951, issue. You have a magazine well worth a subscription, so I am enclosing my check for $3.00 for 1952 subscription.

W. B. Green
Feb. 26, 1952 Flushing, N.Y.

Pays Tribute to Poem!

Editor R & M:

Recently I happened to be thumbing through the Nov.-Dec., 1951, issue of R & M when my attention was drawn to the poem on page 636 entitled — A "Rockhound's Prayer — by Natalie S. Butler. Although the other poems in this issue are very worth while, you can give credit to this touching poem for the reason of my subscription. Being a rock fancier myself, I have always had similar thoughts as those contained in this poem by Natalie S. Butler.

Please start my subscription with your Nov.-Dec., 1951, issue, so that I will have a copy of —A "Rockhound's" Prayer.

John D. Lange
Feb. 16, 1952. Park City, Utah

SOME COMMENTS UPON SAND COLLECTING

By CHAS. S. KNOWLTON
143 N. Acacia, Fullerton, California

While I am not a SAND COLLECTOR, as such, I do have a yen for Garnet Sands and other sands that may contain a few tiny garnets from as many localities as possible. I rather think that THE SAND COLLECTOR is becoming one of the more popular features of ROCKS & MINERALS. Thru it I have made several satisfactory contacts.

Practically all garnet sands carry interesting minerals other than garnets. Most of them have some zircon, identifyable under short wave U — V Lites, tourmaline, quartz crystals, beryls, etc. The black sands will have magnetite, probably some rutile, zircons, garnets and numerous other minerals that show interestingly under a 10 X lens or microscope, or still better under a bincoular scope.

Occasionally some black sand may contain specks of scheelite, such as comes from near Providence, Rhode Island. At the southern tip of India are considerable beds of garnet sands that contain some zircon. Almost adjoining the garnets and to the northwest are considerable beds of zircon that have a few garnets and still further to the north are considerable beds of almost pure rutile.

All of the garnet sands from the Atlantic Coast States as well as the Pacific Coast States that I have seen carry some zircon along with other minerals. I do have some garnet sands from inland lakes and streams that do not show zircon.

Some of the most interesting of the garnet sands occur along the beach in the Doheny State Park in Orange County, California. As at most places there are times when they are plentiful while at other times none can be found. When found there are apt to be several colors of garnets, zircon, quartz crystals, tourmaline, several beryls, peridot and others. Many of the tiny crystals are practically perfect, not showing any wear, while others will be well rounded.

Now for the happenstance that triggered this letter. Several weeks ago my friend, George Oswell, who has a habit of looking in unlikely places and finding interesting things, took a notion to take a walk up a small wash immediately to the north of Fullerton, in Orange County, California, to see if he might find some petrified wood such as is found in that vicinity. This small wash drains a little valley and there general'y is little runoff in the wash. However in January there was a more than four inch rain in 16 to 18 hours so there was plenty of excess water.

George had gone up the wash before the heavy rain and he had found a couple of pieces of petrified wood when he noticed an odd looking waterworn rock about five inches in diameter. When he hit it with his hammer it broke cleanly into three pieces. He noticed some black specks and upon examining with his lens he saw a number of garnets and considerable mica. And this is where I got into the picture. When he first showed me the rock I thought it to be quartzite but on examination and inquiry decided it to be aplite. Some of the black specks appear to be magnetite and there are several that are difficult to identify.

I had hoped to be able to go up the wash to try to find something that George may have overlooked. The rains came and I did not go up until it had dried out a little. When I did go I did not find more aplite, but I did find a chunk of what I suppose is albite that has some quartz and a few tiny garnets that seem different from the aplite garnets.

In the wash channel I saw quite a bit of black sand which, upon examination, shows considerable garnet. Many of these crystals are as near perfect as any I have ever seen. I took a sample home and panned out most of the quartz sand and found the remainder to be mostly magnetite and rutile and what may be black tourmaline. There is considerable zircon and several other minerals.

It seems somewhat surprising to find the amount of black sand in an area

where there are no known igneous rocks near the surface. Everything is alluvial, sedimentary or metamorphic. Many sea shells and bone fossils have been found in nearby hills as well as the petrified wood. At one time there was a small ledge of cinnabar in one of the hills but it did not last long when worked. Some occasional small seams of calcite have been found and some selenite crystals.

From a hobby standpoint I think that many people who do not care to have to learn as much detail as is necessary with mineralogy could find SAND COLLECTING very interesting. This should particularly appeal to those who like to visit interesting and scenic places. If they were to use small clear bottles, properly marked, and housed them in shallow trays in cabinets it could give them much pleasure in recalling the incidents of their gathering. While it would be more satisfactory to do all the collecting ones self it is nearly as satisfactory to trade with other collectors, of whom there are quite several hundred, if not a few thousand.

I started by saying that I have no intention of becoming a Sand Collector for the reason that I already have too many hobbies. But I can see some of its good features as a main hobby. For the same reason I do not intend to become a Micro Mount Collector although that may be about the most fascinating of all hobbies. One knows but little of Perfection until he views the fine crystals, both organic and mineral thru a good scope.

Some time ago some one suggested 4 ounces as the proper amount to collect, I believe that a small vial about ½ inch in diameter and 2½ to 3 inches high should be sufficient. One can then examine the contents thru the thin glass while larger bottles would make it difficult. And there would be the housing problem, as I have about 60 of the small bottles I think that I know.

Ohio Geological Publication List

Ohio Geological Survey, Ohio State University, Columbus, Ohio, has issued a list of publications and maps on the geology and mineral resources of Ohio. It contains 16 pages.

FLUORESCENT ACCESSORIES FOR USE WITH BLACK LIGHT

A new line of fluorescent materials that literally "glow like fire" under long wave ultraviolet or black light is announced by Ultra-Violet Products of South Pasadena, California. They are designed for use with the Blak-Ray tubes and fixtures which the company manufactures, as well as with standard black light sources.

These materials are especially adaptable for use in exhibits, displays, lectures and charts — for industrial applications requiring inspection markings that will be invisible in ordinary light — for pass-out checks and other identification applications — and for protection against pilferage and petty theft.

The new accessories include marking pens and stamp pads for use with invisible inks, as well as wire, yarn, ribbon, crayons, invisible tracer pastes and powders, fabrics, papers. cardboards, and assorted colored sands that are intensely brilliant under the Blak-Ray light.

Also included are water color and bulletin paints of two types: "Visible" — brilliant daylight colors whose intensity is magnified many times, under black light — and "Invisible," which although not transparent, appear white to cream in ordinary light and glow brilliantly in their identified colors under the Blak-Ray. The paints may be brushed, sprayed, or silk-screened, and have greater durability and a much longer life, acccording to the manufacturer, than has heretofore been possible in fluorescent materials of this type. Still a third type of paint is now available, which may be wiped off glossy surfaces such as window glass, mirrors. metals, and painted objects with a dry cloth where temporary application with easy removability is desirable.

For complete catalog listings and price data write Department R & M, Ultra-Violet Products, Inc., 145 Pasadena Avenue, South Pasadena, California.

Fluorescent Accessories for use with Black Light.

WORLD NEWS ON MINERAL OCCURRENCES

Items on new finds wanted. Please send them in.

Abbreviations: xl—crystal xled—crystallized xline—crystalline

ALABAMA—In the northwest corner of Chilton Co., Ala., there are large deposits of silicious dolomite and chert. Some of the chert is oolitic.

ARIZONA — In a letter dated Feb. 8, 1952, from Charles E. Hill, owner of the Arizona Agate Mines at Cave Creek, Maricopa Co., Ariz., is the following paragraph:

"Just thought I would drop you a few lines to let you know I am still alive and to tell you that I have tons of the world's most beautiful and colorful agate that anyone would care to see. I have one chunk worked out up on claim Number 6 that will weigh from 4 to 8 tons of beautiful agate and in just all colors, mixed and blended. I sure get a kick out of the folks who have been to agate localities in other states when they come here and look at my agate. Talk about fine gem and rich colored agate? Bub, I have it!"

ARKANSAS — Mrs. John Roder, Pinebrook Trailer Park, RFD 4, Box 504, Hot Springs National Park, Ark., has found some interesting chert in the north-central part of her State. Most of the chert is grayish, some has a pinkish tinge, and some pinkish bands. Colorless drusy quartz encrusts some of the chert. The find was made on Lake Norfolk in Fulton Co., about 6 miles west of Elizabeth, Ark.

CALIFORNIA — Sol Shalevetz, 220 W. 5th St., Los Angeles 13, Calif., was a recent visitor to Catalina Island, an island resort 22 miles s.w. of Long Beach, Calif. Catalina Island (also known as Santa Catalina) is 23 miles long and 10 wide. The island is known for minerals and Mr. Shalevetz was good enough to collect some for R & M which are as follows:

Catalinite. A local name for a mineral found in abundance on the island and said to consist of jasper and limestone. Two nice cabochons, each 1½ inches in length, that had been cut and polished by Mr. Shalevetz, were received. One was greenish with white calcite vein (specked with red and brown) and the other mottled red, white and brown.

Epidote. Green veins in a pegmatite pebble that had been found on the beach.

Epsomite. White stalactitic mass. Collected off the east end of the island.

Opal (Cacholong). Chalky white crust on a gray chalcedony pebble. Collected on the beach.

Quartz (Agate). Gray pebble that was found on the beach.

Quartz (Chalcedony). Grayish pebbles from east end of island.

Quartz (Milky). Nice pebble found on beach.

Limestone. Grayish pebble with holes bored by various marine life. This 2 inch pebble was found near Church Rock on the island.

COLORADO — A letter dated Jan. 14, 1952, from Prof. Richard M. Pearl, Dept. of Geology, Colorado College, Colorado Springs, Colo., had this line:

"I've sent you a cleavage piece of fluorite from a deposit near Ouray, Ouray Co., Colorado."

It is a nice pale greenish specimen but unfortunately shows no fluorescence.

R. W. Olson, Glenwood Springs, Colo., has sent in 3 specimens. One is a good pegmatite containing nice black tourmaline xls associated with pink microcline, lustrous silvery muscovite, and smoky quartz. It comes from beautiful Glenwood Canyon, near Glenwood Springs, Garfield Co., Colo.

The other two are calcites. One con-

sists of poorly xled white calcite on dark gray limestone; the calcite fluoresces pink under the Mineralight. The other is a brownish impure limestone containing veins of white xline calcite; this calcite fluoresces a bright red (one of the brightest we have ever seen) under the Mineralight. Mr. Olson calls this "flame" fluorescence. The pinkish fluorescent calcite was found on the Crystal River, the other near the river, both in Pitkin Co., Colo.

CONNECTICUT — Nice masses of pyrrhotite, in ferruginous quartz, occur at the old Lane bismuth mine, at Monroe, Fairfield Co., Conn.

DELAWARE — Gray cleavable masses of orthoclase have been found at the old Hubbard (Brandywine) quarry in Wilmington, New Castle Co., Del.

FLORIDA — Grayish-brown masses of chert have been found at San Antonio, Pasco Co., Fla.

GEORGIA — A hand specimen of quartzite containing three prisms of dravite, the magnesian variety of tourmaline, was collected recently from a borrow pit about 1½ miles southwest of Sweat Mountain (Cobb Co., Ga.). The dravite is yellow brown to olive brown and the largest prism is ¾ inch long and ¼ inch wide. The sample was taken from a 20 inch quartzite band which has been injected and locally pegmatized. The prisms are replacements in the massive quartzite.

Black tourmaline is found locally in many places in the crystalline area of Georgia, but so far as is known, this specimen is the first colored tourmaline to be reported from this state. Bright green straw-size prisms of tourmaline have been noticed by the writer in a railroad cut about two miles southeast of Athens (Clarke Co.), Georgia. The Cobb County specimen was collected by Bob Pruitt.—Vernon J. Hurst.

Homer Kellin, Fayetteville (Fayette Co.) Georgia, brought in recently medium well-colored amethyst crystals from his farm one mile north of Fayetteville, Highway 85. — Georgia Mineral Society NEWS LETTER, Nov.-Dec., 1951, P. 206 (Dr. A. S. Furcron, Editor, 425 State Capitol, Atlanta 3, Ga.)

IDAHO — We are indebted to G. Elmo Shoup, P.O. Box 756, Salmon, Idaho, for the following items:

"The beautiful deposit of fluorspar at Meyers Cove on the edge of the Primitive Area of Central Idaho and 48 miles southwest of Salmon, Lemhi Co., Idaho, has been taken over by the Simplot Mining Company. They are milling and shipping many tons and the mine shows promise of being another No. 1 producer. Plans are being made to build a large camp in the spring. The fluorspar (fluorite) from this mine is of all colors and many beautiful specimens have been gathered in the past for jewelry.

"I recently sent to Kane Lapidary & Supply of Phoenix, Ariz., a branch of one of the petrified trees that had been found at Leesburg, Lemhi Co., Idaho (see R & M, Jan.-Feb., 1951, p. 38). From this branch, Mr. Wm. J. Kane made one of the prettiest ring sets, in a beautiful mounting, that I have ever seen. He also sawed and polished two brooches, setting them in silver mountings. Now it looks as if I will have to make a special trip to Leesburg in the spring and gather a few more limbs and branches. Everyone wants a ring or brooch just like mine. I have been informed so many times by collectors and lapidary houses that this petrified wood was too soft or too brittle to work and it had me quite discouraged. However, I find that an expert like Mr. Kane can do a beautiful job on this Leesburg wood. My thanks to R & M for printing his ad. And before I attempt to do any polishing myself, I will see to it that Mr. Kane gets more work from me."

ILLINOIS — Small dark brown jasper pebbles have been found in Chicago, Cook Co., Ill., on a small beach on Lake Michigan, off Lake Shore Drive near Michigan Ave.

INDIANA — Douglas McCain, Box 127, Delphi, Ind., is interested in fossils. In a recent letter he writes:

"I find all my fossils around Delphi, mostly in the limestone quarries, of which one is working. The rock is used for roads and driveways. There used to be many quarries around here whose stone was made into plaster, but they are all gone now. The limestone is a Lockport formation of Silurian age.

"I am sending you a small box containing honeycomb coral (dark gray), crinoid stem (brownish gray), 3 pieces of gray chert, and a small white calcite cleavage.

"Both fossils (coral and crinoid) are very common here and the calcite is often found with them. The chert is found with many arrowheads scattered thickly on a small hill in back of our house; it's probably arrowhead chips. The hill is not a mound though they are common here—it is right near the old course of Deer Creek whose present bed is a mile away."

Delphi is in the western part of Carroll County in the central part of the state.

IOWA — A nice reddish chalcedony pebble, 1 inch in diameter, has been found by Mrs. Frank Krogmeier, RR 2, Ft. Madison, Iowa. The locality is their farm in southeastern Iowa near Ft. Madison, Lee Co.

KANSAS—Beautiful agates have been found in a gravel pit near Concordia, Cloud Co., Kansas.

KENTUCKY — Bob Barnes, 3930 Brookfield Ave., Louisville 7, Ky., has found some very nice aragonite specimens, of a smoky white color that fluoresces and phosphoresces a light green. Its locality is on a hillside on State highway 385, in Owen County, about 10 miles southeast of Gratz, Ky.

LOUISIANA — The U. S. National Museum in Washington, D. C., has in its collection a nice specimen of common opal (mottled gray, white, pale brown) that was acquired in 1886. The locality is near Cotile, Rapides Parish, La.

MAINE — Small brown zircon xls have been found with albite, columbite, smoky quartz and autunite in the feldspar quarries at Newry, Oxford Co., Me.

MARYLAND — Interesting specimens of limonite after wood, brown in color, have been found at Fort Washington, Prince Georges Co., Md., by Wm. Foster, 511 Madison Pl., Falls Church, Va.

MASSACHUSETTS — Some very nice smoky quartz pebbles have been found on the beach at Plymouth, Plymouth Co., Mass., by Mrs. Emily Bourne Karolack of Putnam Park, Peekskill, N. Y., while on a visit to this historic little city. Although Mrs. Karolack is not a collector, she does know a few minerals—has to—so as not to embarrass her cousin, the Editor of R & M.

MICHIGAN — Charles R. Markert, 107 W. Ridge St., Ishpeming, Mich., sent us an interesting clipping taken from THE MINING JOURNAL, Marquette, Mich., Sat., Jan. 5, 1952. The clipping has reference to the "mighty" Mather, the world's largest underground iron mine, which is located in the Marquette Range of Marquette Co., Mich. Part of the clipping reads:

"Iron ore production from the Cleveland-Cliffs Iron Company's "mighty" Mather mine during 1951 topped the previous year's record by more than a quarter million tons, figures released today by the company show.

"The mine's two shafts, "A" in Ishpeming and "B" in Negaunee, together produced 1,635,256 long tons of ore to shatter all existing Marquette Range records.

"Last year also marked the 10th anniversary of the Mather, the world's largest underground iron mine. The "A" shaft was started in 1941. Sinking of the "B" shaft was started late in 1947.

"In 1950 a drift some 8,080 feet long was completed, connecting the two shafts which open on the surface in two cities (Ishpeming and Negaunee)."

The iron ore is hematite and many nice

specimens have come from the mine.

In his letter dated Jan. 9, 1952, Mr. Markert writes:

"If you should ever visit this part of the country, I would enjoy very much the privilege of showing you around with special attention to points of interest on the Marquette Iron Range. I can only boast a moderate collection of between 800 and 900 specimens, however one of my closest friends, Mr. Charles Hawes, Chief Chemist for the Cleveland-Cliffs Iron Company here in Ishpeming, has a mineral collection that is without doubt one of the finest and most complete private collections in the State of Michigan. I could promise you that he would be pleased beyond words to show you this collection."

MINNESOTA — Limonite after pyrite xls occurs as cubes in the slates outcropping on Ely Island in Lake Vermilion, St. Louis Co., Minn.

MISSISSIPPI — In the mineral collection of the U. S. National Museum, Washington, D. C., is a very nice specimen of pyrolusite (black dendrites) on a 4 x 4 inch white quartz pebble. The specimen was found near Iuka, Tishomongo Co., Miss.

MISSOURI — Mrs. John McCarty, 5824 E. 12th St., Kansas City 3, Mo., has sent R & M a nice pale brownish crystalline specimen of calcite on banded brownish limestone. The calcite fluoresces greenish-white under the Mineralight. The locality is Roaring River State Park, Barry Co., Mo.

MONTANA — The Bi-Metallic mine in the Flint Creek mining district, near Philipsburg, Granite Co., Mont., was noted for rhodochrosite. This old silver-lead-zinc mine has been reopened and rhodochrosite is also being mined for manganese. If any reader visits the mine, we hope he will check on the quality of the rhodochrosite and send us a few notes.

NEBRASKA — A nice 2 inch gray fossil coral has been donated to R & M by Wm. Foster, 511 Madison Pl., Falls Church, Va. It comes from the Queens Hill quarry near Plattsmouth, Cass Co., Nebr. The coral was found in the upper Pennsylvania formation and is probably a specimen of Caninia torquia (Owen).

NEVADA — A new tin mine has been opened up by the First Uranium Corporation in the Majuba Mountains north of Imlay, Pershing Co., Nev. We hope some reader will visit the locality and report to R & M on the mineral uncovered.

NEW HAMPSHIRE—Grayish masses of talc (soapstone) has been found at Francetown, Hillsborough Co., N. H.

NEW JERSEY — A letter dated Jan. 7, 1952, from J. Kent Perry, R.D. 1, White House Station, N. J., reads as follows:

"About a year ago I found a rock in Holland Brook (Hunterdon Co., N. J.), about half way between Flemington and White House Station, which from all tests seemed to be smithsonite. I did not believe that it could be smithsonite this far south of the Franklin zinc region so I sent it to Prof. Prucha at Rutgers University and he confirmed it. It is white and massive."

NEW MEXICO — Carnotite, an ore of uranium, is being mined from claims near Grants, Valencia Co., N. Mex.

NEW YORK — Waller V. Morgan, 127 Brambach Rd., Scarsdale, N. Y., paid R & M a friendly visit on Sat., Feb. 9, 1952. Of course the conversation was all "minerals" and one item of note was a recent find of his — a little pegmatite dike in the country rock on Mamaroneck Ave. (near the Hutchinson River Parkway) on the S.E. outskirts of White Plains, Westchester Co., N. Y. In this dike he has found tiny black octahedrons of uraninite that were very much decomposed. He left us a sample of the rock to play with, hoping we might find some of the urani-

nite xls in it. The rock, 3 x 5 inches in size, was composed chiefly of deep black massive smoky quartz which was almost completely surrounded by thin blackish plates of muscovite. No uraninite was found but on one exposed quartz surface was a thin crust of smoky gray glassy hyalite (opal) which fluoresced bright green under the Mineralight. The only other locality in Westchester County, if not in the whole State, where fluorescent hyalite is found are the pegmatite quarries at Bedford.

NORTH CAROLINA — Tephroite, massive and brown, is found near Bald Knob Alleghany Co., N. C.

NORTH DAKOTA — Small quantities of boron, barium, copper and zinc have been found in the lignite occurring at Lehigh, Stark Co., N. D.

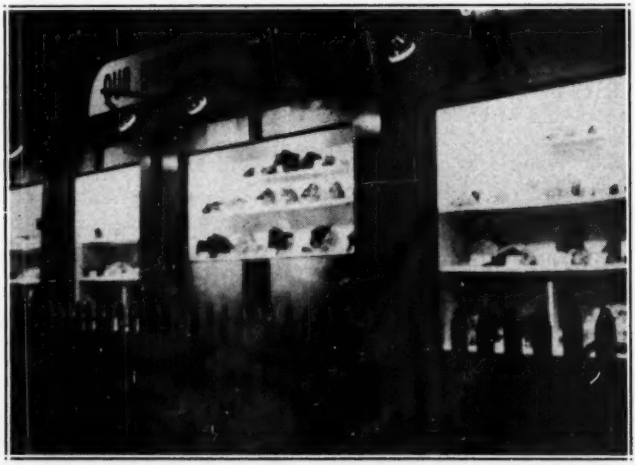
OHIO — A letter dated Dec. 26, 1951, from C. O. Gettings, 2001 Starr Ave., Toledo 5, Ohio, reads:

"Several weeks ago Mr. Walter C. Brown and I found a large pocket of very badly etched fluorite on celestite. This is not unusual but the extent of the etching is so advanced as to round all the cubes, some of which were 5 inches. I called it 'famine' fluorite. Considering the amount of ground water and time necessary to do this it is remarkable. As the pocket is 10 feet square and 4 feet high, I am praying for a break in the weather so I can get back to work it out. The drills at that time were less than 10 feet from the opening."

Another letter from Mr. Gettings, dated Feb. 27, 1952, reads:

"The 'famine' fluorite is from Woodville, Sandusky Co., Ohio, about 10 miles south of Clay Center. I was very much interested in this pocket and was tempted to write an article about it for R & M. This is the *only* pocket I have seen that shows such an advanced work of ground water taking the fluorite away. This specimen is *not* weathered. The pocket was about 10 x 10 x 4 feet high. It contained fluorite, celestite, and aragonite. This pocket is in line with and I think on the same water course as the pocket I found five years ago which contained only aragonite. That pocket, too, was of large size.

"The Toledo Sports and Home Show is over. Thank Heaven! Mr. Walter C. Brown of the Ohio Geological Survey asked me to fill four large cases of minerals for the show. I am enclosing a



The Mineral Exhibit at the Toledo, Ohio, Sports and Home Show. The Exhibit was arranged and set up by C. O. Gettings of Toledo.

picture of the cases. The first one was all Ohio minerals. The second was fluorite only. The third was zeolites, ores and calcites. The fourth was gem material, the quartz family and igneous material. The show promoters claim this was the best attended show they have had in 16 years.

"Have had three shows on T.V. this year showing and explaining crystals and their identification. Received many favorable comments. We need more of this. My friend, Jim Nessle, has a 15 minute show twice each week called "Nature Trails" and I was his guest. He is a professional photographer and he spent one Sunday morning photographing the "famine" pocket at Woodville for slides he will use later on his program. He also used three slides of our mineral display at the show and gave me some nice publicity.

"Am looking forward to spring and a few trips. With Celeste to look after, they must be short ones. Hope to make a rockhound out of her. Am enclosing her latest picture."

OKLAHOMA — Good sharp xls of chalcopyrite associated with galena and sphalerite occur at the Lucky O. K. zinc mine at Hockerville, Ottawa Co., Okla.

OREGON—An antimony mine whose chief ore is stibnite that occurs in veins from 3 to 8 feet wide, is in operation 8 miles east of Ashwood, Jefferson Co., Ore.

PENNSYLVANIA—In the Jan.-Feb., 1951, R & M, an item appeared on page 53 that the mysterious operations that had been going on around Morgantown, Berks Co., Penn., were finally solved with the announcement that a 3,000,000 ton deposit of magnetite has been discovered. The Bethlehem Steel Company had purchased 1,750 acres of farm land in the area and were prospecting the deposit.

Leonard J. Duersmith, 405 Poplar St., Columbia, Penn., has sent R & M a clipping taken from the Feb. 8, 1952, issue of the Lancaster, Penn. NEW ERA relating to the above deposit. According to the clipping, the deposit is being developed and is called the Grace Iron

DESTINED TO BE A ROCKHOUND!

This sweet little girl is Celeste Colleen Gettings, born September 11, 1951, to Mr. and Mrs. C. O. Gettings of Toledo, Ohio. Her father wants to make a rockhound out of her. We hope she is not put to bed with a hammer in one hand, a chisel in the other, while a collecting bag is her pillow.

Mine; two shafts will be sunk, the first one is now down 176 feet and it will be at least 30 months before ore will be mined.

This new Pennsylvania iron mine is being watched with considerable interest by collectors who are hoping and praying it may become another Cornwall or a French Creek, two Pennsylvania iron mines which are famous for their long series of fine minerals; the Cornwall mine is still in operation but the French Creek has been abandoned for years.

Mr. Duersmith has sent us another clipping, from the Lancaster, Penn., SUNDAY NEWS, Feb. 10, 1952, which relates to the new museum being built for the Franklin & Marshall College, of Lancaster, Penn. The foundations for the new museum have reached the stage where concrete cross-pieces to support the first floor are being installed. No date for completion of the building has been set.

RHODE ISLAND — Mr. Donald S. Wrathall, 47 Common St., Providence 8, R. I., has in his collection an interesting 1½ inch dark gray petrified wood pebble. It is banded, containing about 15 thin bands, and was found on North Beach at Brenton Point in Newport, Newport Co., R. I., about 1850 by a Mr. Willis. Although called a beach, North Beach is all rock. As far as Mr. Wrathall knows, only two petrified wood pebbles were found. Mr. Wrathall cataloged the Willis Collection for the Estate, not too long ago, and for this he was given some specimens plus the two petrified wood pebbles; he gave one of the pebbles to Mr. William Engs Dennis, Jr., of Newport, one of Rhode Island's most active collectors but who is now living in retirement.

SOUTH CAROLINA — Nice specimens of chalcopyrite have been found at the Big Wilson gold mine near Yorkville, York Co., S. C.

SOUTH DAKOTA — Some interesting gray septarian nodules containing white xline calcite have been found in Bruley State Park, Union Co., S.D., by Mrs. Edwin P. Olson, Box 425, Beresford, S. D. Bruley Park, 10 miles south of Beresford, is on highway 77.

TENNESSEE — Tiny colorless xls of barite in vugs of cellular white barite (stained brown by clay) has been received from William M. Johnson, R.F.D. 6, Knoxville, Tenn. The locality for the barite is Pall Mall, Fentress Co., Tenn.

TEXAS — Many types of petrified wood have been found at Bluffdale, Erath Co., Texas. Some material is gray to grayish black earthy looking; some resemble limestone, others burnt wood. Still others look like common clay and earth-stained rocks.

UTAH — From Edward Dowse, 329 Reed Ave., Salt Lake City, Utah, comes this item, dated Feb. 21, 1952:

"Down in Millard County, Utah, south of Delta, and out in the middle of the alkali flats stands a volcanic blow-out, all by itself. All round this blow-out and extending for some ways out into the flats can be found water-worn pebbles of a clear yellow color. Further up on the slopes of this blow-out the pebbles can be found, some with crystal structure still showing. These pebbles at one time were called "Utah sunstones"; Prof. Junius J. Hayes of Salt Lake City has examined them and stated they had the crystal structure of labradorite. This locality is not too well known so thought you might like to mention it in R & M."

VERMONT — Black-brown to dark reddish-brown xls of garnet (almandite) up to one inch in size occur in mica schist at the Gassetts garnet mine, Gassetts, Windsor Co., Vt. This garnet and schist resemble the garnet in schist from the famous Roxbury Falls, Conn., locality.

VIRGINIA — Large masses of petrified wood, up to 50 lbs. in weight, were found by Commander John Sinkankas and Peter Zodac, when the two collectors visited the large sand and gravel pit near Franconia, Fairfax Co., Va., on Sat., Jan. 12, 1952. The pit is operated by the Northern Virginia Construction Com-

pany. The petrified wood has a whitish to brown exterior and a deep black interior, and has been identified as cypress.

WASHINGTON—The old Cleveland mine, located in the southwestern part of Stevens Co., Wash., is being reopened and may again produce some of the many minerals which had made it famous among collectors. This lead-silver mine was especially noted for boulangerite as it was the most interesting mineral found. (A most interesting article "Boulangerite and associated minerals of the Cleveland mine, Stevens County, Washington," by Charles O. Fernquist, appeared in the March, 1930, ROCKS AND MINERALS, pp. 6-9).

WEST VIRGINIA — Calcite, which when scratched or freshly broken gives off an odor of hydrogen sulfide (like that of rotten eggs), occurs in the Seneca Caverns in Pendleton Co., W. Va. Minerals giving off this disagreeable odor are sometimes called "stinkstones".

WISCONSIN — A 70-year old lead-zinc mine located 3½ miles northwest of Mifflin, Iowa Co., Wisc., has been reopened and is producing good ore. We hope some reader will visit the mine and report on minerals occurring there.

WYOMING — William T. Baxter, 4615 Chase Ave., Bethesda 14, Md., donated to R & M a very fine flat pebble of gem quality deep black jade. The pebble was found 30 miles west of Saratoga, Carbon Co., Wyo.

AFGHANISTAN — Antimony, coal, corundum, gold, gypsum, iron, lapis lazuli, lead, ruby, serpentine, spinel, sulphur, and turquoise are known to occur in this Asiatic country. In 1950, chromite was mined in the Logar Valley.

ALASKA—Four nice ¾ inch pebbles of magnetite have been sent R & M by Hugh McCrory, Platinum, Alaska. The pebbles were found in the famous platinum-bearing sands at Platinum, Goodnews Bay District, Alaska.

AUSTRALIA — One of the richest deposits of iron ore in the world, a highgrade hematite, is now being mined on Cockatoo Island, off the northwest coast of Western Australia.

BELGIAN CONGO — The only commercial deposit of lead ore in the Belgian Congo is the Kengere mine in southwest Katanga, 55 kilometers (about 32 miles) by motor road south of Manika station on the railway between Tenke and Dilolo. The deposit was discovered in 1932.

The mine is a vein deposit enclosed in limestone of the lower series of the Kundelungu System. The lead occurs as galena, the sulfide, more or less altered to the carbonate as cerussite; these were asociated with pyrite and the zinc minerals sphalerite and calamine. Some copper was also present and one source describes the cerussite as argentiferous. . . . U. S. Bureau of Mines MINERAL TRADE NOTES, Jan., 1951, p. 17.

CANADA—Another letter, dated Jan. 3, 1952, has been received from David Grant, 32 Roseneath Gardens, Toronto 10, Ont., Canada, relative to his discovery of some fine titanite crystals. His letter reads:

"I was pleased to know that my finding the pocket of black titanite xls was of interest to you. The locality is near the village of Tory Hill in Monmouth Township, Haliburton County, Ontario, and is located right on my 200 acres that I own.

"The titanite is in a fissure vein of which the middle half was blown out 30 or more years ago. In the dumps surrounding the blown out portion of the vein, the titanite xls are found. As I say only the middle center portion of the vein has been opened up, with all probability many more of the large titanites exist in the portions of the fissure vein that has been left intact. The blown out portion is about 15 feet long by 6 feet wide and the fissure vein continues from each end of the blown out portion, continues for about 10 feet on each side. There must be hundreds of choice titanite xls in the vein that has been left untouched. I have only cleaned the dumps on one side of the blasted out portion. I still have the other side to dig into 5

feet deep (that is how deep I dug into the opposite dump). I shall blast open the two wings of the vein still left intact this April and I shall send you some very fine specimens the last week of this coming April when the frost leaves the ground in Canada.

"I have found lustrous black biotite mica plates 8" across and very thick. One biotite xl plate was 8½" across and 6" thick. I split this huge xl down into 5 thinner plates and sent them to collector friends in the U. S. A. I found one enormous apatite xl on these titanite dumps also a doubly terminated crystal with all 6 sides of the hexagonal prisms present—all nice and sharp. This crystal is 8¼" long x 3" wide and doubly terminated. Crystals of feldspar, hornblende, biotite, apatite and the titanite reach enormous size here and are seen lying all over the ground. This is real virgin territory, hardly touched by man. I sent a beautifully xled hornblende specimen weighing 18 pounds consisting of huge sharp xls up to 4 x 4" in size — a magnificent museum-sized and quality specimen—to an advertiser in ROCKS AND MINERALS who wished to exchange minerals. As I said, there are hundreds of these magnificent museum-sized specimens all in very large crystals on all of the hundreds of dumps on my land. You must think I am exaggerating but unlike the U.S.A. where for 50 or so years mineral collectors have stripped almost bare the best mineral localities but most Canadian rock outcrops have been left untouched except when found to contain valuable ores, then only the commercially valuable minerals are removed. Huge and perfect crystals of minerals that have no commercial value such as apatite, scapolite, titanite, hornblende and others, no matter how beautiful or well crystallized, are left on the dumps for few Canadian miners are rockhounds. It is very funny, those who live right next door to a large mine dump full of choice minerals, seem to have no interest in mineralogy while those who are active rockhounds always seem to live in a large city, devoid of minerals and travel 500 miles or so to the same mine dumps."

COLOMBIA—An important zinc deposit of the country is the Medina zinc mine located in Medina, about 62 miles east of Bogota, the capitol city, in which sphalerite is the chief ore.

DENMARK—Small celestite xls have been found in flint boulders in the vicinity of Copenhagen, the Capitol.

DOMINICAN REPUBLIC — Large deposits of magnetite occur near the village of Hatillo, La Vega Province, on this West Indian Island.

EGYPT — On Dec. 30, 1950, the Fouad I Desert Institute at Heliopolis, Egypt, was formally inaugurated. The Institute was named for the late King Fouad, who conceived and largely executed the project. In 1927, King Fouad requested a committee of three to prepare a draft project for the creation of a Desert Institute. Subsequently, a piece of land covering 8 acres was selected at Heliopolis, 1 acre of which is now occupied by the Institute building that was completed before World War II.

The Institute is largely scientific in nature, designed to conduct studies of the Egyptian deserts in respect to geology, geography, geopyhsics, atmosphere, water supply, vegetation, animal population, history, and anthropology. The Institute will also study means of developing the agricultural and mining possibilities of desert regions. To assist in the conduct of such studies the Institute is equipped with laboratories and related apparatus. It also has a large library relating to desert subjects and a map room.

Exhibits in the Institute museum are divided into the following sections: geological and mine resources, including samples of ores and rocks, diagrams, charts, and maps; vegetation and animal, which includes history of life in the deserts throughout the centuries. (Second Secretary of Embassy, J. Wesley Adams, Jr., Cairo, Egypt. . . . U. S. Bureau of Mines MINERAL TRADE NOTES, Feb. 1951, p. 39).

ENGLAND — Fine botryoidal and stalactitic masses of psilomelane have been found at Black Down, near Tavistock, Devonshire, England.

FINLAND—Nice titanite xls, brownish-black in color, occur at Frugard, Finland.

FRANCE — Greenish masses of prase have been found at Nantes, Brittany, France.

GERMANY — Nice flat xls of galena have been found at Boxbach, Nassau, Germany.

GUAM — G. H. Haldén, 270 Lewis Ave., Millbrae, Calif., has sent R & M a nice banded specimen of common opal that was collected at Mergagan Point, at the north end of the island of Guam. The specimen contains green, yellow and red bands.

HUNGARY — A huge deposit of magnesite is reported to have been discovered in the Matra Mountains of Hungary.

INDIA — A volcanic pipe containing diamonds has been discovered in Central India, near Majgawan village, about 12 miles southwest of Panna town.

IRELAND — Perlite in considerable quantities occurs in basalt in Northern Ireland, in the Tardee Hill area of County Antrim. The deposit is being quarried.

ITALY — Nice specimens of xled aragonite occur on Monte Ramazzo, Liguria Province, Italy.

JAPAN — Minute but beautiful xls of gold, in cavities of quartz, have been found in the gold mines at Asahi, Tajima Province, Honshu Island, Japan. Fibrous gold has also been found in the same mines.

KENYA — Corundum occurs in association with a dunite intrusion near Mtito Andei, Kenya, Africa. Sapphire has also been found in the deposit.

LIBERIA — A large deposit of magnetite is being mined in the Bomi Hills, 45 miles north of Monrovia, the capitol of Liberia, West Africa.

MEXICO — A good deposit of vermiculite, 5 feet wide, has been found near Chilpancingo, Guerrero, Mexico. The deposit is close to a highway to Acapulco, Guerrero's chief seaport.

MOROCCO — Beryl has been found at Tiznit, in the extreme southern part of Morocco.

NORWAY—Enormous xls of enstatite have been found in the apatite- bearing schists of Bamle, Telemark Province, Norway.

PERSIA — Colorless crusts of cerussite have been found on galena from the Abshar Akhlomad mine, about 50 miles west of Meshed, Persia.

PHILIPPINE ISLANDS—G. H. Haldén, 270 Lewis Ave., Millbrae, Calif., has donated to R & M a nice red jasper pebble and a nice specimen of porphyritic pumice (floatstone), both coming from the Porac River, at Del Carmen, near Floridablanca, Pampanga Province, Central Luzon Island, Philippines.

SCOTLAND — Wolframite has been found in granite on the Island of Rona, off Cape Wrath, Sutherlandshire, Scotland.

SOUTH AFRICA — Ernest M. Skea, Box 46, Pilgrims Rest, Transvaal, So. Africa, has sent R & M a clipping taken from the SUNDAY TIMES, Johannesburg, Transvaal, Oct. 7, 1951, relative to the finding of a large deposit of attapulgite near Naboomspruit, in Transvaal. Parts of the clipping read as follows:

"Attapulgite, a clay mineral, is a hydrated silicate of aluminum and magnesium used for decolorising and deodorizing animal, vegetable and mineral oils.

"Large tracts of land near the railway line between Naboomspruit and Zebediela are under option for mining rights.

"The deposit, the first found in the Union of South Africa, is only about the third known deposit in the world."

Nice specimens of grayish banded agate and whitish chalcedony, coming from the Scheninegan farm near Nylstroom, West Transvaal, South Africa, have been donated to R & M by Dr. Claude H. Barlow, Box 54, Trumansburg, N. Y. Dr. Barlow collected the specimens per-

sonally during 1951, while working on a scientific project in that country.

SPAIN — Iolite has been found in the andesites at Cabo de Gata, Almeria Province, Spain. Cabo (Cape) de Gata projects off the southern coast of Spain into the Mediterranean Sea.

SWEDEN — Fine precious serpentine occurs in Gulsjö, Wermland Province, Sweden.

TANGANYIKA: We are indebted to John S. Albanese, P. O. Box 536, Newark 1, N. J., for a nice specimen of rubellite (pink tourmaline) in pale lavender lepidolite which comes from Hombolo, Dodoma District, Tanganyika, Africa.

TASMANIA — Wavellite, in aggregates of radiating disks of silvery white, often accompanied by green variscite, is found implanted on the cleavages of Silurian slate at Back Creek, Tasmania.

TRANSJORDAN — During 1950 a small factory for cutting and polishing marble was established in Jordan. The marble, which is quarried near Madaba and finished in Amman (the capitol of the country), is noted for the variety of colors, including red, pink, and green. Its use as flooring and facing in local buildings is steadily increasing, but production is limited by the fact that only one cutting machine is available at present. Egypt has already shown an interest in importing Jordan marble, and it is hoped that additional export markets may be found in other Middle Eastern countries.—U. S. Bureau of Mines MINERAL TRADE NOTES, Oct. 1951, p. 38.

TURKEY—Large deposits of scheelite and wolframite have been found at Uludag, near the city of Bursa, Turkey.

UGANDA — John S. Albanese, P.O. Box 536, Newark 1, N. J., has donated to R & M a nice colorless cleavage specimen of selenite (gypsum) which comes from Kibuku, Toro, Uganda, Africa.

VENEZUELA — Huge deposits of bauxite have been discovered north of Upaba, Bolivar State, Venezuela, not far from the large iron ore deposits at El Pao, owned by the Bethlehem Steel Co.

WALES — The old Van lead mine, 2½ miles N.N.W. of the town of Llanidloes, Montgomeryshire, Wales, abandoned for a number of years, may reopen in the near future as the property has changed hands. Nice specimens of galena, hydrozincite, and sphalerite have come from the mine.

Minerals Bring Happiness to Amputee

Editor, R & M:

Just a line or two as means of letting you know that I am still going strong. I ought to head this letter "Christmas 365 days a year!"

I have never in all my life encountered a brotherhood as kind and understanding as my fellow rockhounds. My days are just one wonderful surprise after another. I wish you could find it possible to tell all of the wonderful people how much I and the rest of the club members (the Mineral Misfits) appreciate the things they have done for us. I must say that I have been able to gather up what I though was an entirely ruined life and make a go of things. This and the fact that my wife and children enjoy my company once more is in itself a miracle wrought by the collective efforts of yourself and those who subscribe to your wonderful magazine.

I wish to take this opportunity to once again thank you for your consideration. I am sending you a small token of my appreciation. Please accept it with my best wishes. I would like to do something for all the kind people in this hobby. Do you think that I would be amiss in proposing the following deal? Anyone sending me 2 rolls of 35 mm Tungsten type Kodachrome film will receive one roll returned as 35 mm slides. They can select either the 20 or 36 exposure rolls. I thought that I would use the film I get this way to make slides for sale. The money derived from this would be used to buy equipment for the Club.

There are 7 tried and true members in the Club besides myself at this time with a dozen off again on again Joes. We have received such wonderful treatment from the people in this hobby that putting it into words would be beyond my command of the English language. I strongly advocate some such hobby to anyone in similar straits as a method of restoring initiative and courage as well as ambition.

R. P. (Bob) Lambrecht
21307 Raymond Rd.
Feb. 20, 1952. Maple Heights, Ohio

Editor's Note: Mr. Lambrecht is a double amputee from World War II. He has formed a mineral club of similar amputees and they call themselves, Mineral Misfits. (See his letter in the Nov.-Dec., 1951, R & M, p. 597). Mr. Lambrecht has sent us a set of 10 Kodachrome slides of minerals and a viewer. The slides are excellent and we heartily recommend his proposition to our readers.

SANDSTONES NEAR L'ANSE, MICHIGAN

By K. SPIROFF

Department of Geological Engineering, Michigan College of Mining and Technology. Houghton, Michigan

In Houghton and Baraga Counties, in Michigan's Upper Peninsula, are various isolated sandstone outcrops the age of which have not been definitely ascertained.

The picturesque sandstone cliffs on U.S. Highway 41, just west of L'Anse, are of special interest. The sandstone rests unconformally on folded slates of the Michigamme series. The base of the sandstone is made up of a conglomerate which interfingers with layers of sandstone and is lithologically very heterogeneous. The pebbles are vein quartz; variously colored types of quartzite; black and ferruginous chert; amygdaloidal purplish brown basalts that show diabasic texture (both kaolinized and silicified plagioclase with an abundance of hematite) with epidote, chlorite, and chalcedony; dense basic basalts whose texture is completely obliterated; green to black slate; arkosic and micaceous sandstones; graywacke, and microcline fragments.

Some of the pebbles of the conglomerate are about 14 inches in their longest dimension, the average range being from six inches to one inch. The matrix is fine sand grains. The fragments are well rounded. Neither scratched faces nor special orientation of the larger pebbles has been noted. No qualitative determination of the different rock types — their size, shape, and distribution — was made. It was noted that the microcline occurs as unaltered cleavage fragments which are entirely angular. Slab-like slates and sandstone fragments are also common.

The principal constituents of the matrix are quartz, quartzite, chert fragments, and slate. Other minerals found are muscovite, biotite, microcline, orthoclase, epidote, apatite, hematite, magnetite, ilmenite, garnet, and zircon.

The conglomerate grades into a red-to-brown sandstone, its composition similar to the conglomerate matrix. The dip is nearly horizontal; it has an inclination of only a few degrees northward.

The outcrop shows cross-bedding and negative concretions (bleaching of various fantastic forms). There are also horizontal layers in which small pebbles of quartz can be seen. Along one of these layers, about 30 feet above the conglomerate, are U-shaped erosional channels. In these grooves (and elsewhere) are angular fragments of sandstones. The sandstone fragments are well cemented, have a banded appearance due to mica, are dark brown in color, and are altogether different in appearance from the sandstone cliff.

Can this be imbricate structure of a intraformational sharpstone conglomerate? Or are the sandstone fragments from the ledge near by? In the first case we have one age; in the second two.

The writer favors the second hypothesis. Under ordinary conditions sandstone disintegrates very readily; it does not yield boulders or pebbles, but under favorable conditions sandstone fragments are occasionally preserved. This outcrop shows that nearby there was a sandstone ledge of an age different from that of the present L'Anse cliff.

Since the L'Anse outcrop is similar to Cambrian sandstone elsewhere, it is probably of that age. If that is true, the pebbles of the sandstone are older than the Cambrian — probably Sibley.

The heterogeneous lithological nature of the conglomerate, along with a deduction that its components were derived from sources compartively nearby, raises a question. Where are the felsite pebbles which are the chief constituents of the sediments that are interbedded with the Keweenawan lava flows? The amygdaloidal material could have been derived from Silver Mountain and Sturgeon River Falls. At Sturgeon River Falls the sandstone rests unconformably on the flows. The relation between the flows at the Sturgeon River and those of Silver Mountain has not been correlated. The strike and dip are the same, but there is no

sandstone outcrop near the Silver Mountain; therefore the exact relationship has not been ascertained.

At Limestone Mountain the Ordovican limestone rests on sandstone. The writer believes that the Limestone Mountain outcrop is a graben and has been preserved because of unusual glacial movements. The sandstone ½ mile east of the mountain would, if projected, cover most of the Limestone Mountain. This outcrop also shows steeply dipping sandstone. The glacial grooves on Limestone Mountain show westward movement; on Silver Mountain the general trend is from northwest to southeast, but the minor grooves are northeast to southwest just as they are at Torch Lake. At Houghton the movement is to the east while at Winona and Lake Mine it is to the southwest.

Summary

The sandstones near L'Anse, Michigan, are of two different ages.

The lack of felsite pebbles shows that the source rocks from which the Cambrian sandstone was derived lay to the south. The Amygdaloidal basalt pebbles are not from the copper-bearing flows of the Keweenaw Peninsula.

OBITUARY NOTICES

It is with sorrow that we report the passing of the following mineralogists:

Geo. E. Carpenter

Geo. E. Carpenter, of 140 Roseville Ave., Newark, N. J., and one of the senior members of the Newark Mineralogical Society, died Feb. 9, 1952. Services were held Feb. 11th.

H. W. H. Stillwell

H. W. H. Stillwell, of 6 Maple Ave., Rockville Center, L. I., N. Y., a former mineral dealer, died on Dec. 22, 1951, just after he had packed all his minerals to take to Vermont for retirement to sell in a gift and mineral store. His wife is selling his large private collection and any collector interested is welcome to call, inspect, and purchase what pleases his fancy. If the collection is sold before this issue comes out, Mrs. Stillwell may have moved to Vermont.

E. H. WILSON DIES AFTER LONG ILLNESS

Funeral services for Ernest Holmes Wilson of 10 Witherspoon Road, Verona, N. J., were conducted Sunday afternoon at the George R. Dancy Funeral Home, 9 Smull Avenue, Caldwell, N. J. The Rev. George L. Willets, pastor of First Presbyterian Church, Caldwell, was the officiating clergyman. Burial was in Prospect Hill Cemetery Monday.

Mr. Wilson, who had retired in 1935 from the position of assistant purchasing agent of the Standard Oil Company of New Jersey, died early last Friday morning, Dec. 21, 1951, after a long illness.

Born May 30, 1879, in Pittsburgh, Pa., Mr. Wilson had attended schools in Brooklyn, N. Y. He started a long career with Standard Oil as an office boy. His retirement as assistant purchasing agent in the firm's New York offices came after forty years' service.

Mr. Wilson in May, 1931 was named a director of the West Essex Savings and Loan Association, which has offices at 423 Bloomfield Avenue, Caldwell. He continued in this post until February, 1948. In the latter year, he was elected an honorary director, his illness making active participation impossible.

Coming to this section from Brooklyn, Mr. Wilson had been a resident of Caldwell for about a half-century. He moved to Verona six years ago.

For many years Mr. Wilson had been a collector of fine mineral specimens and had developed his hobby to the point of amassing one of the most complete collections in this area. At one time he held membership in the Newark Mineralogical Society. New York Mineralogical Club, the Mineralogical Society of America, and the Rocks and Minerals Association.

Mr. Wilson possessed also what was regarded as an outstanding stamp collection. He was a charter member of the former Caldwell Club.

Mr. Wilson's late wife, Mrs. Ella Dolbeer Wilson, died in 1936. He leaves a son, Charles E. Wilson of Caldwell.

—*Caldwell Progress-Verona News*. Dec. 28, 1951.

Delighted With First Copy!

Editor R & M:

I received my first copy of ROCKS AND MINERALS yesterday and I can't begin to tell you how delighted I am with it. I never knew before that such a magazine was published.

Alan Doss

Feb. 28, 1952. Plant City, Fla.

THE MICRO-MOUNTER

Conducted by LEO N. YEDLIN
P. O. Box 187, Yalesville, Conn.

We have located another source of new and used microscopes and optical equipment in New York. The Peerless Camera Store, Lexington Ave. and 43rd St., New York City, has opened a special department within the past few months and a wide variety of such equipment is available at reasonable prices. In addition to the well known brands, Peerless is marketing a fine Italian line — Galileo. On the microscopes we examined, we found the optics fine and the designs of the instruments in keeping with modern trends and techniques. Adapters and extension tubes for photomicrography were in stock, and an assortment of lights for the 'scope were displayed. We recommend you investigate. Ask for Bernie Friedman.

Meandering through the Connecticut countryside last fall, we were driving along route 70, west of Cheshire. At the intersection of route 70 and 68, there is an abandoned trap rock operation. From the floor of the quarry seams of tan and white minerals were discernable. Loosely piled rock at the foot of the wall showed similar evidence of mineralization. Well, the place is worth a trip. Thick, stubby xls of natrolite, some on analcite, clear sharp xls of secondary albite, small balls of prehnite, good stilbite and calcite xls abounded. Some were iron coated, but superficially, for a thin stream of warm water and a soaking in a common household deturgent removed all signs of stain. These are choice m/m specimens and are from a locality that few collectors can include among their specimens.

Sign on the garnet ledge at West Redding, Conn., "NO TRESPASSING. NO EXCEPTIONS". There is still enough material along the side of the road to afford good collecting to the micromounter without the need of straying onto forbidden soil.

Our first real vacation in three years took us south through Baltimore, Washington, Richmond, Winston-Salem and Spruce Pine, N. C. At Baltimore (Towson) we spent an evening with Paul Desautels, acquired some swell stuff, and again viewed a small part of his magnificent m/m collection. Paul is now assembling m/m's for the U. S. National Museum. Our past and present observations of his work assure a well turned out job. We, too, visited the Museum and came away with much good material from the scraps of its duplicates. An evening with Phil Cosminsky at Falls Church, Va., resulted in more specimens, and especially a babingtonite from Goose Creek, Va., the first find of this mineral in the state. Fluorite from Luray, Va., showing the hexoctahedron, was another of his contributions.

Winston-Salem, N. C., provided a meeting with Lou Perloff, stationed there, and he reported the acquisition of another binocular microscope to augment the one he has at home. We drove to Little Switzerland, N. C., in a snowstorm where we explored the feldspar quarry known as the McKinney Mine. (This was a casual inspection. After all, how many micromounts can you find under a couple of inches of snow?) Visited Linton Greene's mineral shop at Spruce Pine. Saw some wonderful things there, and especially some small hiddenite xls from the name locality. These could not be pried away from him. (If you're interested in fluorescence, Greene has some magnificent hyalite on granite that is pathetically cheap. A fine specimen 4" x 6" can be had for a couple of dollars.) Visited a scrap mica mine where the mineral was taken out with a hose. A high pressure stream was played on the rock. About half of the spar was kaolinized and washed away. The result was loose mica, and mica mixed with soft feldspar and quartz. This latter was

crushed and the muscovite separated. It must pay well, for the area is studded with such operations.

Took in the Green Mt. mine, due to reopen about April 1st for columbite, beryl and uranium phosphates. Scorning a few small masses of beryl we acquired a fair columbite xl (macro) and some specimens of the richest torbernite and autunite we'd ever seen. (New Hampshire collectors please note). The yellow autunite was most interesting. Surfaces and seams were coated with the flat plates of the fluorescent material. Superimposed on these yellow plates were bright green xls of torbernite — nonfluorescent. On the specimens of the torbernite alone the xls occurred in tiny rosettes in the vugs and flat plates in the seams.

We noted a couple of miners working a dyke of rock along the road between Burnsville and Green Mt., N. C. They were mining vermiculite, now so extensively used in the building industry as an insulator and as a lightweight plaster mix. The operations were by hand with a 50 gal'on steel drum on a manual hoist used to convey the mineral out of the pit, about 20 feet deep. The workers claimed that the raw material produced 80 bags of expanded vermiculite per ton, and that the operation paid better than wages.

All through this area small pits were being worked by hand for potash spar, or microcline, and the material sold to the large operators a couple of tons at a time. And from time to time the most wonderful specimens become available.

It is interesting to note how unmounted specimens are sent through the mails. Our own method is to enclose the specimen in a small paper envelope about 1½" x 2½" with all pertinent data written on the outside. These are put into in a small carton and so mailed. More fragile specimens are first wrapped in soft tissue. Bjareby of Boston rolls a small cone of paper and encloses the specimen. Some pack each mineral in individual boxes with sawdust or tissue. All these are good. We think, however, that the most foolproof thing we've ever seen was the trick of cementing a dozen specimens to one surface of a cardboard box, poor side down, of course, closing the box, wrapping it in crushed newspaper, and then inserting the whole in another box for mailing. The newspaper absorbed the jarring shocks, the specimens were not bruised through contact and the whole thing traveled beautifully. The minerals were numbered and the corresponding data pasted to the other side of the paper box.

James B. Palmer, of Reno, Nevada, a convert to the field of m/m mineralogy sends us a letter, part of which is quoted herewith:

"I happen to be in a peculiar position here, as I am the only collector of m/ms in this area, and I know of only one other in the entire state, and a long distance from Reno. This is unfortunate as knowledge and improvement in technique is only obtained through discussion with other collectors. It is also amazing, I think, because Nevada abounds in mineral occurrences and mining was, and still is, one of our main industries. Therefore I was in the position of going into this specialized field and of having never seen a mounted m/m. I was fortunate, however, in having the name of Mr. Paul Desautels. I wrote him, and he very kindly sent me a well-mounted and labelled m/m. I now have a technique that I can follow, and it will eliminate the probability that I would otherwise have mounted up several hundred and then decided to change them in the future. This I would not want to do in the name of uniformity.

"I have decided to use plastic boxes presently being sold by Robert Lobel of Daly City, California. These cost a little more, but are far superior to anything that I have seen thus far. I only wish, now, that some enterprising manufacturer would make a black plastic box with an unglazed interior. This might eliminate the need for black inserts. Incidentally, I wonder if anyone has tried sandblasting the interior of these plastic boxes. Might this not also eliminate the need for inserts?

"Also as a beginner, it has occurred to me to wonder why it seems to be the

custom to use a label that only covers half the box-top. A lot more information could be placed on a label covering the entire box-top, and in-as-much as you have to take the top off to view what is inside anyhow, why not use the entire top for label? A lot of these questions I know to be academic, but they are probably questions that might also plague other beginners.

"I surely have dreamed up something to break rocks with though, and this does work. After absolutely ruining many specimens with the hammer, I decided that something better must be obtained I therefore sent for the back-issue of "Rocks & Minerals" of October, 1941, in which appeared an article entitled "Micro Mineral Mounts Mineral Trimmer," by Jay T. Fox. I happen to have a friend here who is an excellent blacksmith as well as being interested in minerals, so we used Mr. Fox's splendid design with some modifications as to structure and then inserted a 1½ ton automobile jack instead of the manual wheel that he used. This gives me a terrific and steady pressure and seems to be entirely satisfactory. As a matter of fact, while we use this 1½ ton jack, there is no reason why one of much larger capacity could not be used."

Answering Mr. Palmer: Regarding the plastic boxes, we don't think it necessary to have black inserts. True, they make the specimens stand out, but except for very light colored and white minerals, and those few affected by light, black boxes aren't a "must." Sandblasting wouldn't help much, but would make ink or paint "take", and might be of some advantage.

As to labels on the box, there's no set ru'e. Most collectors cover the entire top surface of the box with a label. Some put enough label on the box top merely to write a name, and add additional information on the inside of the cover or the underside of the mount. The method is unimportant. Get the information there somewhere, and be certain to mark the box and cover somehow, so there won't be any switches and misnomers. Glad to have you aboard.

QUARTER MILLION PAID OUT IN ORE BONUSES IN 1951

Grand Junction, Colo. — More than a quarter million dollars was paid out last year to uranium ore producers under the new incentive bonus program of the Atomic Energy Commission.

The graduated bonus arrangement (based on uranium oxide content of the ore) was established in June in Domestic Uranium Program Circular 6 and was retroactive to March 1, 1951. It was one of several steps taken by the AEC to stimulate domestic production of uranium.

The payments have resulted in a sizable increase in the income of many small mining operators and have stepped up output of this raw material for the atomic energy program. Approximately one-third of the 70 mines which have been certified for bonus payments had no production prior to March 1, 1951.

The bonus is offered to new producers and certain existing producers on that part of the first 10,000 pounds of uranium oxide in acceptable ore delivered to qualified mills or ore buying stations between March 1, 1951, and February 28, 1954. The money is paid directly to the producers and is in addition to established prices paid by the various processing plants and purchasing stations.

By the end of 1951 about 190 applications for certification of mining properties for the bonus had been received by the Colorado Raw Materials Office at Grand Junction. More than one-third of these applications have been acted upon and the remainder are being processed as rapidly as the necessary information on ownership, property boundaries, production and other pertinent matters can be obtained.

(This bonus should not be confused with the $10,000 premium announced in 1948 for discovery and production of *high-grade* uranium ores from new domestic deposits. No one has qualified for this earlier bonus).

THE AMATEUR LAPIDARY

Conducted by COMMANDER JOHN SINKANKAS
1107 S. Oakcrest Road, Arlington, Va.
Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all.

CUTTING A 578 CARAT AQUAMARINE

It isn't often that the professional lapidary is called upon to cut stones in excess of several hundred carats; rarer still are the calls for gems that approach and exceed five hundred carats in weight. In the case of the average amateur, stones of about one hundred carat weight are sometimes undertaken, usually with the sole purpose of proving to oneself that it can be done successfully. When the amateur is given a piece of aquamarine weighing 262 grams (1310 carats) and asked to cut a stone from it, you can imagine what his feelings would be! This however, is precisely what happened to me!

On July 30, 1951, the U. S. National Museum, Washington, D. C., purchased a lot of rough Brazilian aquamarine from Mr. Jack Shunk who was until recently, an instructor on the staff of the Gemological Institute of America. Jack had brought back the aquamarines personally after a sojourn in the gem producing areas of Brazil. Offered at an attractive price and possessing an unusual green color, Dr. W. F. Foshag of the National Museum's staff arranged purchase from the Roebling Endowment Fund. A few days later, I was asked to undertake the task of cutting the largest single piece in the lot, a splendid although somewhat irregular fragment of what must have been a beryl crystal of about 6" in diameter. The size of this fragment was about 2 and 5/8" long and somewhat less in width; weight-262 grams or 1310 carats.

Prior to accepting the rough for faceting, it was examined carefully in a beaker filled with Bromoform (R.I.=1.59) and the few inclusions and surface cracks carefully noted and confirmed in company with Dr. George Switzer of the museum staff. This preliminary examination established the fact that the vast majority of the stone was clean and the few imperfections disclosed turned out to be conveniently located near the outside where judicious trimming, preforming and the final cutting should cause them to be eliminated. The imperfections revealed were of two types: conchoidal fractures due to stream bed pounding, and a very faint and small patch of bubble-like inclusions, a typical aquamarine "veil". Upon conclusion of this examination, the stone was accepted for further study and cutting.

The rough stone presented several interesting features, at least one of which influenced the final decision as to the form the completed stone should take. Since the fragment had fractured off a larger crystal at an angle of roughly 45 degrees from the principal axis, the fracture plane created a rough sort of table and the vestigial crystal planes formed a natural shallow "vee" which could conveniently form the pavilion. Orientation of the rough in this fashion would return the largest volume of finished stone but since the specimen exhibited quite distinct dichroism with the richest color looking down the principal axis, some trepidation was felt about this scheme. The other alternative would have been to suffer a drastic loss in weight by placing the table normal to the principal axis in order to realize the best color. My personal vote was cast for cutting for weight rather than color since in an unusually transparent colored material like aquamarine, the multiplicity of paths taken by the entrant light rays will usually pick up sufficient color along the best color direction to make very little material difference in the final appearance. This is true, of course, only for the modestly pleochroic minerals. This view of the problem prevailed and the stone was then studied for the outline form which would be best suited to provide maximum weight and pleasing symmetry and still perfom well optically.

ROUGHING—Altho the finished stone weighs in at only 577.8 carats verus 1310 to begin with, better weight could not be realized without deviation from a symmetrical outline. One end of the stone had to lose at least a quarter inch of material since it was the remnant of a deeply etched basal face and the hexagonal etch marks had to be eliminated. The other end had a long corner which was also sawed off while the prospective table, far from regular, was also sawed to reduce it to a reasonably flat surface.

During the sawing operation, done by hand on a sintered-rim 6" saw, several Bromoform immersions were made to check progress. As much material as possible was nibbled off during sawing to save tedious labor later in the grinding process. It was at this stage that the stone gradually took some semblance to its final elliptical form.

PREFORMING—It is always a heart breaking sight to see beautiful rough material gradually melt away into dust before the grinding wheel but sad experience dictates the necessary nicety of judgment that must be exercised in this process, the reduction of the rough to eliminate the last few pits and hollows without wasting a bit more material than is absolutely necessary. A small crack located near the future girdle drove me to distraction as it seemed as if it would persist forever but it too was finally almost ground out with the expectation that faceting would eliminate it completely.

The roughing process was done freehand on a standard 120 grit carbo wheel 8" x 1" thick. Frequent dressing with a diamond point was necessary to remove bumps which were unavoidably formed by the heavy mass of the aquamarine. A copious flow of water was sprayed forcibly on the cutting face of the wheel to prevent the slightest formation of heat. Periodically the stone was checked by measurement for symmetry and centering, marking center lines on back and front with a bright red China marking pencil helped enormously in maintaining the perfection of form.

As is my practice in making preforms, the outline of the oval was first ground, then alternately the crown and the pavilion. The latter are ground alternately in order to preserve the 2:1 ratio for pavilion versus crown depths, grinding one completely may result in inadvertent enlargement of one in favor of the other.

Frequent complete stops to examine the stone in the final stages of preforming are necessary to keep symmetry. Turning the stone about and viewing it from all possible directions will detect inequalities, these are then marked with the red pencil and corrected on the grinding wheel.

THE TABLE—The table is generally the largest facet on any given gem and the difficulties surrounding attainment of perfection are in direct proportion to its size. The table on this gem is 1 and 5/8 inches in length and 1 and 3/32 inches wide and is approximately 50% of the total width of the stone. Needless to say, a table of this size would be impossible to polish on an ordinary faceting lap since the enormous drag of the stone would undoubtedly stall the driving motor or violently twist the faceting head. Even if the motor and faceting head were rugged enough to take the stone it is hardly likely that the lapping process would leave the surface of the table with an absolutely plane surface which would be matched by an absolutely plane polishing lap surface. Most laps develop low annular areas and after short use there is a noticeable deviation from a true plane which naturally reflects itself in the type of surface left on the facet. For small facets this is of no great account but for large tables, it is a prohibitive drawback.

With these considerations in mind, it was obvious that a well-proportioned table on this gem would require a technique not usually adopted for faceting. Accordingly I used the flat lapping scheme which is so commonly employed for polishing agate slabs or blocks.

The rough ground table was lapped on a flat horizontal steel lap with 220 carborundum grit until all saw marks and other defects were gone. This was followed by a very careful lapping with

400 carborundum grit. Finally, Grieger's 1200 Lapping Compound was used to impart a very fine lapped finish to the entire table and resulted in an extremely fine flat surface. Some scratches were incurred the first time around with the 1200 but re-lapping took care of them after I discovered the reason. If a stone is held on a lap plate for a minute or two without re-charging, the grit breaks down and becomes smaller resulting in a finer finish. At about this point, some of the grit from the center of the lap plate slides into the path of the stone and being substantially larger in size than the worn-down grit, causes scratching. The answer is to feed the grit to the plate quickly and repeatedly by dabbing the brush down every few seconds. This is most important in the final lapping.

Usual procedure departs from mine at the 400 grit lapping stage where belt sanding takes over for final smoothing prior to polish. The 1200 grit stage leaves the stone with such a lustrous fine surface that it is entirely feasible to go to the felt buff immediately for the polishing. This is exactly what I did with the aquamarine. The resulting table was smoother, entirely perfect in finish (no defects noted by 10x), and at least as plane as the best facted tables! The slight rounding inevitable at the edges was later removed completely by faceting the crown up to the table. The table was polished with cerium oxide (quite wet to prevent the slightest generation of heat) on a curved felt buff. I expected and received full success in this technique since it is one that I have constantly used for preparing flats and the backs of cabochons. It is recommended without reservation.

DOPPING — The completion of the table opened an unexcelled window into the stone where a careful study of the interior could reveal any previously unseen flaws. There being no new discoveries, the stone was prepared for dopping.

For smaller stones, dopping is usually a question of simply heating the stone and dop to the proper temperature and then joining. For this huge specimen it was felt that heating the stone to proper dopping temperature would be extremely hazardous since the rate of heat conduction through the rough could possibly be too slow to avoid excessive expansion stresses. Since I use stick shellac as a dopping cement for thermo-sensitive stones I hit upon the idea of cold dopping using liquid shellac followed by dripping on melted stick shellac. This also worked perfectly.

The stone was carefully washed in pure alcohol and then dipped and dried several times in liquid shellac. When the shellac was quite hard, it was placed table down and hot shellac dripped on the pavilion to build up a heavy layer of solid shellac. The stone became warm during this process but that's all. The piping-hot shellac bonded perfectly to the thin painted layer on the stone and made a wonderfully strong bond. When the shellac was built up high enough, a large specially constructed VEE dop was heated very hot and pressed over the mound of solid shellac, melting its way down until all of the vee was well seated. Additional shellac was dripped over to cover the dop. A small alcohol lamp provided an admirable source of heat to melt the stick shellac for the dripping process.

When the stone was reversed for cutting the pavilion, essentially the same process was used on the crown with the important exception that the large flat dop used was dipped in liquid shellac, carefully centered in the table and allowed to dry thoroughly. After it was dry and firmly cemented in place, hot shellac was dripped over it and the crown of the stone to build up a strong unbreakable bond. The method used here was entirely successful also and had the very strong advantage of subjecting the stone to the minimum of heat. The above process is recommended for stones of about 100 carats and over.

CUTTING THE CROWN — For obtaining the maximum return of weight in the finished stone, it was determined that an oval or really, an ellipse would be best. Sixteen main facets of almost the same size were the basic cut made

on the crown. Sixteen more were cut directly above until they joined the table resulting in a two-step cut. The girdle mains were then trimmed off on the corners in brilliant style with 32 girdle facets brought up exactly to the upper corners. Sixteen star facets were then added between the table mains. As finished, the crown is double brilliant cut with horizontally-split main facets.

The polishing of these facets was done without incident using an ordinary lucite lap and a watery solution of cerium oxide. A special liquid wetting agent called ChemX-100 was furnished me for use by a friend in Paterson, New Jersey. This agent and others like it, are invaluable in polishing since they serve to float each particle of polishing agent mitigating agglomeration and scratching. Of the 207 facets polished on this aquamarine, only a few were observed to develop new scratches during polishing. It is believed that the wetting agent and the use of a watery solution of powder were mainly responsible. Special wetting agents are not needed however, the ordinary so-called "detergents" or soapless soaps will do almost as well, e.g. Tide, Dreft, etc. Use only a tiny pinch in the polishing dish for adequate effectiveness.

CUTTING THE PAVILION — The pavilion was somewhat more complex and troublesome since four steps of diamond shaped facets decended from the girdle in a gradual in-curve until almost at the apex where the curve was much sharper. A nice eye is required to estimate the angles of cut if an even and symmetrical arrangement of facets is to be obtained. The oval shape is very misleading and one is very apt to get facets longer than others necessitating re-cutting. The best rule to give in a case like this to to be absolutely meticulous in sizing and facing each facet in a tier for they are the foundation of accuracy for all facets following them.

Cutting the pavilion was not easy and it is not my intention to lead to any impression that it was. If a series of steps were cut, the work would have been greatly simplified since steps join each other and add to each other's accuracy. In the case of diamond shaped facets however, the rather widely separated points can be most easily confused and astonishing inaccuracies occur in spite of what is thought to be careful study. The worst part is that the inaccuracies are really not apparent until the next series of diamonds is cut, then back one must go and recut, truly a tedious job.

Special care must be taken at the ends of the stone to shrink the width of the facets gradually so as to have them look well. If this is not done, cuttting at the ends will sudden'y become embarrassing because there just isn't any space left.

Polishing of the pavilion was uneventful and proceeded as for polishing the crown.

FINISHING THE GIRDLE—Cutting and polishing of both crown and pavilion left almost all of the girdle sharp-edged. The faceting head was lowered to the 90 degree position and unlocked to permit the stone to rotate freely. Using the 1200 grit diamond lap, a thin flat girdle was carefully ground around the stone. This was then polished on the lucite lap with cerium oxide, a slow process. Use of felt is not recommended here since the sharpness of adjacent facets will be lost. A flat leather or wooden lap would probably have been quicker.

OTHER NOTES—Full grinding with a 1200 diamond grit lap would be an extremely long process even on a stone of 20 or 30 carats. For this reason I precut large facets with a 400 diamond grit copper lap and finish with the 1200. The latter leaves an extremely fine finish which requires the minimum of time to polish and consequently results in very flat facets with extremely sharp junctions.

My facet head stand rod was much too short to allow working this enormous stone. A 3" round, 2" thick billet of brass was accordingly used to elevate the stand rod to the proper height. A hole thru the center of this billet and a long bolt to screw into the lap assemb'y table plate held everything firmly.

The equipment used was an Allen

578 carat Brazilian Aquamarine now in the Roebling Collection of the U. S. National Museum. Cut by J. Sinkankas.

compact faceting unit which consists of all the essential machinery required to facet. The 64 tooth gear was used but merely for the purpose of conveniently locking the stone in a desired position. It is not possible to cut all the symmetrical ellipses that the cutter may hit upon with a 64 or 96 tooth gear, they simply do not have enough gradations. In practice, these gears are excellent for those cuts which are based on the angles of regular polygons. i.e. squares, rectangles, triangles, hexagons, octagons, etc. In such cuts, the vast majority of facets are perpendicular to some diameter drawn thru the center of the stone and providing the cutter doesn't attempt too many series of facets. They are easily and accurately set up on these gears. In the case of ellipses, pendeloques, marquises, pears, hearts, etc., these gears may have some positions which coincide quite well with the position that the desired facet should take however. This (unfor tunately) is only true for several facets. The vast majority do not coincide and much jockeying among the teeth is necessary to get even a fairly respectable effect. What is necessary and what I had to do on the aquamarine is to forget the teeth of the gear altogether as having any positional value and rather think of them as a convenient method of stopping the stone near where the facet should be. A light cut is taken which by its shape tells whether both the proper angle and the proper position have been taken. The facet head is slipped by loosening the tightening screw and the stone twisted to its correct position. Another light cut and any final adjustment necessary is then taken. The correct angle vertically is assumed by raising or lowering the facet head by the micrometer screw. In cutting an odd shape, each facet differs from its neighbors both in angle and amount of rotation. It cannot be otherwise. After cutting this aquamarine, I am inclined to think of cutting a round or an octagon as so much child's play.

VITAL STATISTICS.

Weights: Rough—1310 carats
Preform—660 carats
Finished—577.83 carats

Dimensions:
length 2⅜" wide 1-7/8" depth 1-17/64" table 1⅝" x 1-3/32" ratio of crown depth to pavilion—13:27

Facets:
Crown—81 pavilion—126 total—207
All facets are triangles except table.

Color: Green, slightly yellowish. Color is delicate, evenly distributed.

Dichroic: Almost colorless and green, distinct.

Dispersion: Marked in spite of low dispersion of beryl. This is due to thickness of stone and high angles on crown.

Flaws: Virtually flawless.

SIMPLE LETTER OPENER

By LUCILLE SANGER
1090 West Oxford Avenue, Englewood, Colorado
Co-author of "CABOCHON JEWELRY MAKING

It is a great and satisfying pleasure to use a colorful article one has enjoyed making. The following letter opener is easy to make and a joy for those who prefer to cut outsize cabs.

Either copper or silver metal may be used. If copper is used, then the cabochon should be copper and black obsidian; if the metal used is silver, then silversheen obsidian should be used. Both stones take a wonderful polish.

If silversheen obsidian is to be used, it must be remembered that it is directional and should be sawed so that, when polished, the surface gleams with each turn of the cabochon, in the same way a tiger eye cab does. This is called chatoyancy. If it is cut the other direction it will result only in a dark piece of obsidian.

Sometimes the copper and black obsidian occur in a directional material also and when it does is very beautiful indeed, having not only the sheen but the pat-

tern of copper on black as well. If it does, then the same precautions in sawing are necessary as for the silversheen obsidian.

Select a slab of obsidian half an inch thick and cut a high, nicely rounded cabochon four and five-eighths inches long and one and seven-eighths inches across the widest part. Shape as in Figure 1.

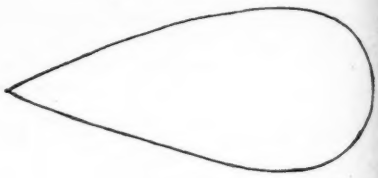


Fig. 1
Cabochon Shape.

Using eighteen gauge metal, draw the shape of the knife as shown in Figure 2. To do this, lay the cab on a piece of paper and draw around it. Cut out the pattern and fold it exactly in the middle, down the length. Lay the pattern on paper and draw around it, putting a dot where the fold ends at the large end. Remove the pattern and lay a ruler from the dot to the point of the cab and for five inches beyond the point.

Now place the large end of the cabochon pattern on the drawing with the point of the teardrop hidden one inch under the large end of the pattern, as shown in Figure 2. Be sure that the point of the pattern falls on the line drawn through the partly hidden pattern. Draw around the cab pattern and cut out. Lay this pattern on the metal and draw around it with a scratch awl. Be sure a line is drawn on the metal around the lower point of the handle as this will be needed as a guide in placing the bezel. Carefully saw out the piece and file the edges until they are smooth. It is to be hoped that the worker will be fairly expert since too much filing will throw the pattern off. File the point of the opener on both edges so that it is sharp enough to cut paper.

Cut a bezel from 22 gauge metal, three-eighths inches wide. Place the bezel around the handle, and where the bezel comes up onto the knife file off the lower edge the same thickness as the knife. The bezel, when laid out before using will resemble Figure 3. Solder the ends of the bezel together, remembering that this joint coincides with the point of the stone. Place on the knife and wire into place. Solder. Remove the wire wrapping and place in hot pickle. Remove from pickle and wash and rinse. At this time, remove the file marks with worn silicon carbon cloth. Set the stone and give a brilliant polish to the metal on the muslin buff.

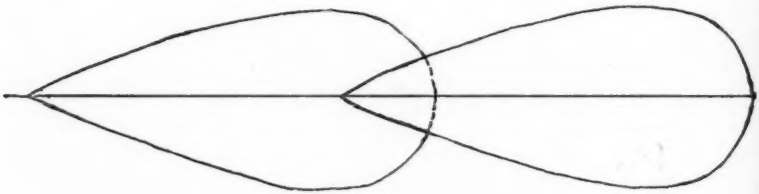


Fig. 2
Metal pattern for letter opener.

Fig. 3
Showing steps filed in bottom of bezel.

PENNSYLVANIA GEOLOGICAL SURVEY COOPERATES WITH STATE MINERAL SOCIETY

The Mineralogical Society of Pennsylvania is believed to be the first and only mineralogical society to enjoy the indorsement of its home State. This announcement would have appeared in the Nov.-Dec., 1951, issue of ROCKS AND MINERALS had it been called to our attention sooner; in that issue it was announced that the Ohio Geological Survey is cooperating with the mineral collectors of its State (p. 606).

In the Nov., 1951, issue of THE KEYSTONE NEWS-LETTER, the official publication of the Mineralogical Society of Pennsylvania (Mrs. Helen Bauhof, Editor, 352 Church Lane, Philadelphia 44, Penn.) appeared the following item, on p. 2:

"S. H. Cathcart, Director of the Bureau of Geologic and Topographic Survey, Harrisburg, Penna., has expressed great interest and approval in the project of M.S.P. to list and take inventory of mineral localities in the Commonwealth. His department will assist and sponsor the plan.

"Please make notes of all the places you see, visit or hear about. Give the location, owner, and what was found, or any information you have. It will be checked if you are uncertain of any detail, but first let us get the places to check. Do not ignore the obvious ones. Send reports to Otto Bauhof, 352 Church Lane, Philadelphia 44. Pictures, too, will be a big help, with maps in publication. This is a gigantic piece of work, and everyone must do their bit.

"It has also been announced that a small mineral exhibit is now on display at the Capitol. M.S.P. will be pleased when there is a showing worthy of wonderful mineral Pennsylvania."

A letter dated Feb. 11, 1952, from the President of the Mineralogical Society, Mr. L. J. Duersmith, 405 Poplar St., Columbia, Penn., reads in part as follows:

"I think that it would be proper to say that the Mineralogical Society of Pennsylvania is the first and only Society to enjoy the indorsement of its home State. To elaborate — one letter from Dr. S. H. Cathcart, Director, Bureau of Topographic and Geologic Survey of the Commonwealth of Pennsylvania states, and quoting 'We do not favor the approach of providing members of your society with official letters. We feel that the same result could be accomplished if the Society provided each member with an identification card bearing the signature of the President of your Society and a photograph of the bearer. On the reverse side of the card, a statement of purpose could be made. If the Society wishes, this statement could include the fact that the inventory is a project which is approved by or sponsored by the State Geological Survey.' Other letters have confirmed this and the Survey has asked our Society to write a pamphlet on 'Mineral collecting as a hobby' to be published by the State. They have, also, been referring requests for information on mineral localities to our Society. All in all the Society is becoming intimate with the Survey as time goes on. I hope that the above will give you an idea of my stand and that we are very proud of the way in which we have been received by our State."

An earlier letter from Mr. Duersmith carried the information that the Pennsylvania State Museum is offering to cooperate with the Mineralogical Society.

He Knows His R & M!

Editor R & M:

It is indeed a pleasure and an honor to subscribe for your fine magazine. I have looked over many mineral and mining magazine and have decided that ROCKS AND MINERALS is best suited for my interest. I am enclosing check for a one year subscription, starting with the Jan.-Feb. issue, and know I will enjoy every issue of it. I am positive I will renew my subscription for many years to come, and hope that sometime I may contribute to it myself.

William Rouslin
Providence, R. I.

Feb. 4. 1952.

COLLECTING IN CHINA

By CLARENCE M. JENNI

3129 Chadwich Dr., Los Angeles, Calif.

While I was a Team Commander, as a part of the Mission to China, headed by General George Marshall, during 1946 and 1947, I had an opportunity to pursue my favorite hobby, that of collecting geological specimens, with especial emphasis on Minerals. My trave's covered most of North and North Central China, from the Yellow River in Honan to beyond the Great Wall in Inner Mongolia. I spent the winter of 1945 in Kalgan, on the Great Caravan Route to outer Mongolia; and made several long trips by jeep into areas north and west of there. This is a most interesting area geologically. The great fault block that makes the eastern boundary of the Great Plateau known as the Gobi Desert, passes just north and west of Kalgan. It rises abruptly to heights of 500 to 1000 feet with a tilt to the northwest. Along the peak of this uplift in the ancient rocks runs the famous Great Wall, not the well kept wall the tourist sees at Hangow Pass, but the old wall, much as it was 1000 years ago. Generally speaking it is a triangular heap of large stones, 20 to 30 feet high, with guard towers at intervals. Along the wall, and in the wall proper was a considerable amount of Jasper, Jasp-agate, Chalcedony and a poor grade of Agate. It was difficult to collect, for this area was in Communist territory, and the Communists insisted on accompanying us every where we went, presumably because they were afraid we would be attacked by bandits. They always opposed us going outside the city walls and never could understand why we wanted to go out to pick up rocks.

In the city proper there were a number of processing compounds for Mica, brought in from the Ordos region west of Kalgan, on camel back. This Mica was of the Muscovite Variety, in large books 5 to 10 inches in diameter and some times up to 5 inches in length. Beryl crystals were of frequent occurrence, associated with the Mica, but never of gem grade. Some of the crystals were sharp and of good color, however.

I also observed Mica here of a deep bronze color which may have been Phlogopite, or possibly only a bronze colored Muscovite.

While in this area I visited, with the Catholic Bishop of Kalgan, Bishop DeSmett, a man more than 80 years of age but extremely active physically and vigorous mentally, numerous Neolithic culture areas, at one of which about 10 mi'es north of Kalgan, I counted 7 cultural levels. I collected a great amount of pottery fragments, of many primitive types and also arrow and spear points and other artifacts. On my return to the United States I presented these to the University of California of Los Angeles.

After returning south into Honan I visited coal mines at Chiau Chow, formerly operated by English Firms, but now in Communist hands, and collected Jet of fine quality. The miners at that point carve many things from this Jet, including Bracelets, etc. The quality is as fine as the Jet of Whitby, England. In the mountainous area north of there I visited iron mines that had been operated for many years, by primitive methods. The ore was mostly Hematite intruded into igneous rock and which had numerous vugs where fine black velvety crystals, with a coxcomb structure, and associated with small clear Quartz crystals, occurred. These I believe to be Goethite.

During this period I collected a great amount of archeological material from An Yang, the ancient capital of the Shang Dynasty, which was at its peak more than 1000 years B. C. Many fine bronzes, especially weapons, were secured from this area. Here I saw a very large crystal of Cinnabar in a crystalline mass, but due to the fact the Chinese believe it has magical properties in counteracting mad dog bites, the dealer asked an outrageous price, and I refused to pay it.

China offers tremendous opportunities

for the collector of semi-precious gem stones. Carvings of Jade, Rose Quartz, Topaz, Carnelian, Jasper, and even of Aquamarine Beryl and Turquoise are plentiful and inexpensive, by American standards. Quartz carved in the form of crystal balls, of dragons, of dogs of Fo and others are beautifully done and a treasure for any collector. Snuff bottles can be obtained carved out of almost any mineral that will carve, and in the most delicate and beautiful designs. China will long live in my memories as a producer of the rare and beautiful in minerals.

A Plea for Paleontology!

Editor R & M:

I was very glad to see the new rules for exchanging rocks and minerals. They are something we needed very badly and should go a long way toward equalizing our trades. I've had a lot of trades from my ad in R & M and a lot of pleasure. Some of the boxes were just plain junk, but happy to say others were jewels each specimen fit for the cabinet, and a real thrill to unwrap such beautiful specimens.

In looking back, you mention at one time having a paleontology department but lack of interest caused it to be discontinued. I would like very much to see it re-established. I'm quite interested in fossils especially the invertebrate types, such as brachiopods and corals, etc. In my trades I find a good many are also interested in this type of collecting. I'm not enough of an authority to write a technical article on fossils but could tell of some collecting trips. For instance, an article I'd like to see would be one on the spirifers from the different periods of different states, or any of the other interesting brachiopod fossils. Then there are trilobites, and plant remains, coral and so many interesting things preserved in the rocks of the life in ages past. So why not a paleontology department ???

Amel F. Priest
Feb. 25, 1952. Peru, Iowa

Can Someone Help?

Editor R & M:

I have a problem. As you know I specialize in apatite. Well I just received an enormous, beautiful, deep sea green apatite crystal of superb quality. Unfortunately a large patch of iron oxide stain coats the whole top termination and two large prism side faces. Apatite is soluble in some acids, perhaps in all acids. Is there an acid or some way to remove the ugly stain without harming the crystal? It is a shame for a magnificent crystal like this to be marred with an ugly blemish. I never had trouble before so know nothing about removing stains by acids. And I have no worthless pieces of apatite to experiment with. Can someone help me?

David Grant
32 Roseneath Gardens
Jan. 12, 1952. Toronto 10, Ont., Canada

New Line of Bausch & Lomb Laboratory Microscopes Features High Precision and Comfortable Operation

Ball bearings and rollers throughout the focusing system are one of the outstanding features of a new line of Laboratory Microscopes now in production at Bausch & Lomb Optical Company, Rochester, N. Y. Called Dynoptic Labroscopes, the new instruments also feature a low position fine adjustment and a mechanical stage with low controls that enable the operator, after setting the coarse adjustment, to rest his hand on the table and manipulate the other controls in a comfortably relaxed position.

A ball bearing on the horizontal shaft of the low position fine adjustment absorbs thrust as well and assures effortless turning of the focusing knob. Two rollers on the level transfer horizontal movement of the screw to vertical travel of the focusing slide. The slide is fitted with ball bearings assembled in pressure plates. Finally, the nosepiece has ball bearings around its outer rim and a ball stop, a combination which assures parcentricity over a long period of effortless use.

Substage equipment, in addition to that formerly available, includes a Variable Focus Condenser in a tubular mount which does not require a rack and pinion substage. This development makes available, at the option of the purchaser, the advantages of this focusing condenser on an inexpensive model Labroscope. A substage illuminator is available which can be used integrally with the Labroscope in place of the mirror or separately.

Optical equipment for the new instruments, which were developed after several years of research, includes a new, longer working distance and non-divisible 10X achromatic objective. Bausch & Lomb has prepared a complete program of dealer education and promotional material as well as a profusely illustrated demonstration catalog.

Attention all Subscribers!—Try This Method!

Editor R & M:

About a week ago another rockhound gave me two back issues of ROCKS AND MINERALS to read. The result, I am sending in my subscription.

James R. Cles
Feb. 26, 1952. Seattle, Wash.

MINERAL SHOPPER'S GUIDE

Conducted by CHARLES A. THOMAS
706 Church Street, Royersford, Pa.
Advertisers are invited to send notes or samples of their products. This service is free.

In gobbledegook, MSGORAMINEJ means Mineral Shoppers' Guide of ROCKS AND MINERALS is no easy job. We ask the readers of this fine magazine, to bear with us and if we seem to slip from the serious to the ridiculous, to think nothing of it. Stop worrying whether or not your 1951 income tax remittance really reached Uncle Sam and try to enjoy things about minerals. We may not be able in every case to tell you where you may dig for pink crystals of scapolite or find the lovely blue-green clinoclasite for your micro collection, but we will endeavor to tell you where such things may be bought from dealers.

Inflation has not affected the price of mineral specimens too much. However, a word to the wise should be sufficient. This is the year to buy such things as faceted gems, gem material and fine mineral specimens. More and more collectors are going in for polishing. This means that semi-precious gem material will be more scarce (for the finer material) than ever before.

A Pennsylvania collector, who is trying to build up a fine fluorescent display, asks why the catalogs do not seem to list wernerite, the beautifully fluorescent long wave complex silicate from Canada and a few other isolated localities. We would like to point out that all of the better catalogs that were sent us in 1951, and the newer ones for 1952, do list this superbly fluorescent mineral. Look under scapolite, var. wernerite, instead of under the "W's" for wernerite. Ward's, Schortmann's, Minerals Unlimited and many other good dealers carry this fine mineral in stock. We note also that small pieces may be obtained from Guild. of Franklin Park, Ill. To Mrs. C., of Wisconsin, these small pieces at $1.00 and $2.00 a pound should be what you want for that art project.

Speaking of fluorescent art work in which small mineral pieces are used, either crushed (not too fine, according to experience) or in small shaped pieces to resemble petals of flowers or night-lit windows of a church or home, we have been asked several times where good blues, bright reds and brilliant yellows might be obtained. We know, for a certainty, that fine fluorescent blue may be obtained from the famous Castle Dome fluorite locality in Arizona and suitable specimens containing fine bright blue bands of fluorescent fluorite may be purchased from Minerals Unlimited and Ward's. A California variety, which comes with druses of quartz crystals attached, is a lighter but not less brilliant shade of blue. It is in wider bands or comes in nearly solid masses of white fluorite, the same shade as the white quartz with which it is associated. All of the better dealers, or we should say, dealers, who have everything, list many varieties of fluorite from which to make a choice. Fine crystallized specimens should never be dissected for art work when massive varieties may be had.

There are many shades of red fluorescent calcites and a few of other specimens such as the rare axinite from Franklin, N. J., and other rarities such as mooreite from Franklin and Ogdensburg, N. J., which come massive and lend themselves nicely for slicing into material for fluorescent art work. We can think of no better advice than to say that Franklin calcites should be the red medium for that art project. They come in fine white to grey cleavage masses with or without unwanted franklinite grains admixed. Most dealers have such material in stock. And there are so many shades . . . all most brilliant under short wave, with a few specimens which react brilliantly under the proper type of long

wave lamps. Most transformer type long wave lamps or lamps which have a ballast in their assembly, are apt to cause a variety of red reactions in many Franklin calcites.

While we are on the subject, we may as well go all out. There are so many shades of the yellow band wave length. Calcium larsenite is really yellow, but it is a scarce and high priced mineral found only in Franklin, N. J., lists. However, a fine brilliant yellow scapolite, variety wernerite, from Canada, mentioned above, may be obtained from Ward's, Minerals Unlimited, East Coast Mineral Corp., Guild, Schortmann's, Plummer's, Hugh A. Ford and many other good dealers. Mineral dealers usually carry the deep brilliant yellow and the light brilliant yellow wernerite, the princess of yellow fluorescent minerals. It polishes beautifully. Mrs. Gene Belz, of Quarry Garden Farm, Lansdale, Pa., has fashioned most beautiful large brooch-size flats from Canadian wernerite. They are superb! Gem yellow wernerite (yellow in daylight) is a scarce article and is usually classified as gem material. Non-gemmy material, however, takes a fine polish and the reaction under a good long wave lamp, even under a purple X bulb, is most brilliant in a gorgeous yellow reaction. First-class dealers carry the gem and non-gem wernerite.

Though the above mentioned wernerites range from light yellow to deep yellow, bordering on orange, a really brilliant orange color is most difficult to obtain for art purposes or rounding out a good display of colorful fluorescent specimens. Some zircon masses and crystals will produce a fine brilliant orange under the short wave Mineralight. Manganapatite from New England is a dull orange, while that from California, though not a solidly fluorescent type, is slightly deeper orange than most minerals. Another dull orange may be had from many sphalerites and barites, variously reacting under both short wave and long wave. Franklin zincblende (sphalerite) is a very good orange-pink, a salmon hue under transformer type long wave lamps only. Bright blue specks of an altered sphalerite on this specimen may detract from its value as an orange adaptable to art work. Mexican sphalerite is a good but somewhat dull orange in fine solid masses. African material is also of a similar dim, though definitely orange hue. Sodalite and hackmanite from Canada, as well as the others mentioned, are carried in stock by most dealers.

For a white fluorescent mineral, we must acknowledge the common aragonite from various localities. It may be crushed to a certain sized grain (not to a fine powder) without losing its whitish hue. We have seen many varieties of fluorescent aragonites which range from a cream white to a blue or green-white. The most brilliant white fluorescent aragonite we have seen, comes from a Pennsylvania locality. The M.S.G. has helped a few collectors to get specimens of this material, though it may not be stocked by your favorite dealer. The purple X bulb gives this material a most brilliant white, but the best lamps for this purpose are the EH4 long wave lamps manufactured by Ultra-Violet Products, Inc., the Teddar Lamp made by Maurice A. Hamonneau, the Raymaster, sold by Ward's and other dealers, are best for fluorescent aragonite and tend to eliminate the bluish hue when activated by the puple X type lamps. A most brilliant white fluorescent mineral, though not adaptable for art work, due to its spotty habit, is the zinciferous aragonite found rarely at the famous old zinc mines at Friedensville, Pa. It has the most brilliant white fluorescence known. If your favorite dealer does not have this unusual mineral in stock, contact the M.S.G. for further information. Scheelite 'spuds' are white.

Green . . . that is, real green, is most difficult to find in fluorescent minerals. Willemite is generally greenish and most brilliant, but tends to be too close to such greens as curtisite, schroekingerite, autunite, hyalite and other brilliant, though not definitely green minerals. A leaf-green or a grass green mineral may exist, but it is apt to be a dull green, such as Arizona and California chalce-

donies. These hydrous quartz fluorescent specimens may have a use in art work worth experimenting with. Even so-called chemical greens, found in the chemical phosphors, do not give a genuine leaf-green, so necessary to giving a green color to leaves and stems in a fluorescent flower picture. It would be well to rely on the prepared paints which some dealers carry in stock in small amounts. At least several ROCKS AND MINERALS advertisers carry these paints.

Brown is also a color not found in natural fluorescent minerals. Glassy slags have been known to react in a fairly good brownish color, though by no means a brilliant reaction. Some barite and zircon masses have been seen in brownish orange, though usually of dull reaction.

Lavender to purple, in a dull reaction may be found in calcites from various localities. Franklin material is most apt to afford lavender calcites. Most Brewster County, Texas, calcites of the famous phosphorescent type, from Terlingua and elsewhere in the County, react a brilliant pink under the transformer long wave lamps as mentioned above, and also a very lovely blue to lavender under the short wave Mineralight. Some of these calcites will react in a most pleasing manner when both lamps are used at the same instant, giving a bluish-pink or lavender reaction. For some reason, royal purple is not to be expected in natural fluorescent specimens. though some rare crystals may approach this elusive color tone. Purple in daylight, such as amethyst, yes.

Many dealers who advertise in this magazine carry Franklin, N. J., friedelite. It is a silicate which usually occurs in a nice brownish color to reddish-brown in daylight. Where a brown minerals is needed for an art project fashioned from minerals, for the daylight examination of the picture and a jet black when the mineral is examined under the short wave lamp, friedelite is indicated. Its blackout under the short wave is complete. Magnetite and franklinite are apt to reflect the lamp rays. Friedelite does not. Schortmann's and Ward's have this mineral in stock, in various hues of brown to brick-red. Consult other dealers for this and other minerals should your favorite dealer be in short supply. So much for the colors obtainable for fluorescent art work.

We were asked, recently, if the colors of the advertised South American emeralds in or not in matrix, were ideally emerald in color. This is a very controversial thing to contemplate. We have seen synthetic or glass 'gems' that were 'ideally emerald' in color and transparency . . . yet this is not true. No two world famous perfect emerald gems are alike in green hue and transparency. We should like to state, simply, though not authoritively, that if the Colombian or Russian crystals, or others, have a certain amount of transparency, fine lustre, and with more green than blue, in combination with the other qualities, they are, indeed worthy of the name emerald, rather than the name beryl. Thus, Colombian and Russian (Ural) emeralds would not be advertised if the clear, sharply crystallized and green color, in combination, did not exist. Beryl it is, nevertheless. Oriental emerald is a beautiful gem which approaches the ideal emerald color. It is green, sometimes grass-green sapphire.

Speaking of emeralds, we have often wondered why fine mineral collections often lack at least one in matrix. A nice thing to see collectors pay more attention to, would be the various beryls. One could make it a project for 1952, starting with a rough chunk of common beryl, grading up to clearer crystals to white, aquamarine, blue, pink (morganite), golden, and on to a nice clear green emerald. Specimens may be had from dealers who are advertising Colombian emeralds.

Forgive us for jumping back to fluorescence. Mr. G. of Georgia, who asked us some time ago about an inexpensive long wave lamp for the classroom, has, no doubt, seen the ad placed by the Pacific Museum (Shell Beach, Calif.). The lamp is a cold burning long wave tube, which sells for $22.50. This type will last a long time, and, although cold type

long waves do not "push" as intensely as the transformer hot type long wave lamps, they are, in the long run, favored under certain circumstances over the hot types. When we want to show the special effects of beautiful fluorescent minerals showing off, we do use the more intense hot lamps, but we find ourselves using the cold type very frequently.

A new Cargille Heavy Liquid will be available (watch their ad), which will be of special interest to gemologists. This liquid, of special density, will accurately and easily test the genuineness of diamonds. The M.S.G. has seen a few clear white sparklers, handed down as heirlooms, which proved to be stones other than diamond, but which were stated to be diamond. Use of the Cargille Heavy Liquid would have proved the observation conclusively.

Many collectors like to exhibit minerals from every state. Whether one travels much or little, this seems to be one way to make a collection interesting. Mr. J. F. Cornell, a new advertiser, plans to stress North Carolina minerals. He has sent the M.S.G. some nice siderite from his state. Mr. Cornell also sent in a very serviceable canvas collecting bag, which he is currently offering to collectors for a reasonable sum. Mr. Cornell is an enthusiastic collector-dealer and we know of no better way to welcome him than by sending him a mail order. Some fine minerals have come from North Carolina so we urge the reader to watch Mr. Cornell's future ads and efforts.

Just as the March-April issue was to be sent to the printers, the M.S.G. received a splendid group of pegmatite minerals from the owners of the Imperial Mines of California, Ltd. Thank you Mr. Greer! Although the specimens as numbered in your ad (on page 659 in the November-December, 1951, issue of ROCKS AND MINERALS) are very excellently selected pegmatite minerals, we feel that the 'snow plastic' mounted colored tourmalines and the delicately tinted kunzite transparent cleavage are actually worth the charge for the other six items. Readers, please note the ad, which means that once again Pala and Mesa Grande specimens may be obtained and at little cost for such rare specimens.

Many collector-readers were heartened when they saw the ad in the last issue of 1951. There are few orthoclase specimens to compare with those taken out of this district and need we mention the worthwhile quartz, cleavelandite, lepidolite (some with pink tourmaline), lithiophilite and other rare specimens? Do you have a nice kunzite specimen? If not, please investigate the Imperial Mines of California, Ltd. ad in the January-February issue of this magazine (page 83). We are sending them an order today.

TO PETER ZODAC

What is this rock that I have found?
What is this stranger to the ground?
Is it a piece of melted glass?
Or only a pebble of worthless mass?

What is this sand I found at the beach?
What is its history? What does it teach?
Is this a garnet? How can you tell?
What makes this barite smell like h- -l?

You say this chunk is plain fluorite?
Here's another and it's apatite!

Oh! sure, I know mica, that's one thing
I know,
But what causes the layers? What makes
it grow?
Why does it look like a book in a ledge?
That has to be opened with chisel and
sledge.

These are some questions you answer each
day,
Always with patience — in a warm,
friendly way.
Oh! what would the novice rock hunters
do?
If there wasn't a helpful Editor like you!

FRANCIS E. SCHILLER

THE SAND COLLECTOR

Conducted by PETER ZODAC, Peekskill, N. Y.

Items on interesting sands wanted. Please send them in.

This department made its first appearance in the Nov.-Dec., 1950, issue as an experiment and in the hope it would last a year. We had no idea how many sand collectors were in the country and we were hoping that the few we did know about would give us their support. There are far more collectors than we realized and these are giving us so much support with notes and samples that we have enough material on hand now to keep this department running for the next two years and—every week more notes and sand samples keep coming in. As an example, just a few weeks ago, Arnold M. Dixon, Chestnut St. RFD 403, Foxboro, Mass., sent us 44 different sand samples, each in its own vial; some of these we will try to describe in the next issue.

Mrs. Lera A. Hegel, 1945 Magnolia Ave., Los Angeles 7, Calif., sent us 13 samples from Southern California, 4 of which are described below.

Creek Sand from Redlands, Cali.

This interesting sand was taken at Redlands station, San Bernardino Co., Calif. (Mile Post 546.5 on the So. Pacific R.R.). It comes from San Timateo Creek which starts near the divide between above two mountains (San Jacinto Range and San Gorgiano Mts.). The sand is dark gray in color, coarse grained, and consists chiefly of smoky quartz and white albite with some black magnetite; much of the magnetite is embedded in the quartz.

Desert Sand from Salvia Siding, Calif

Collected from the east end of Salvia Siding, Riverside Co., Calif. (Mile Post 592 on the So. Pacific R.R.). A windswept sand from the Indio Desert. It is a dark grayish coarse sand with rounded edges and consists chiefly of quartz (smoky, white, brownish) with some white feldspar, green epidote, and black magnetite.

Dry Wash Sand from Mons Siding, Calif.

Mons Siding is in Riverside Co., Calif. (Mile Post 576.43 on So. Pacific R.R.). The sand from the dry wash at this place is very coarse and gray in color, consisting of quartz (smoky, white, brownish), white feldspar, black hornblende, silvery muscovite, green epidote, and black magnetite.

Dry Wash Sand from Palm Springs, Calif.

This locality is at Palm Springs Siding, Riverside Co., Calif. (Mile Post 582 on the So. Pacific R.R.). The sand from the dry wash at this place is coarse grained and dark gray in color consisting chiefly of quartz (smoky, white, brownish), white feldspar, a little green epidote, and a little black magnetite.

Black Sand from Fullerton, Calif.

Chas. S. Knowlton, 143 N. Acacia, Fullerton, Calif., has sent in a sample of an interesting black sand which is found in a small wash immediately to the north of Fullerton, Orange Co., Calif. This is a fine grained black sand consisting chiefly of black magnetite, colorless quartz, red and pink garnet, green epidote, and colorless zircon that fluoresces orange under the Mineralight.

Garnet Sand from Doheney State Park, Calif.

Mr. Knowlton sent in also a most interesting garnet sand which he collected on the beach of the Pacific Ocean at Doheney State Park, Orange Co., Calif. This is a dark red and white coarse sand consisting chiefly of red and pinkish garnet, and white, colorless quartz, with green olivine, greenish-white beryl, black tourmaline, black magnetite, and colorless zircon that fluorescences orange under the Mineralight.

Black Sand from Dry Lagoon Beach, Calif.

Dr. David F. Houston, 111 Santa Fe Ave., El Cerrito, Calif., has sent in a nice sand sample which comes from Dry Lagoon Beach in Humboldt Co., Calif. This site is the beach of one of three lagoons

that occur in a row about 30 miles north of Eureka, Calif. The sand is black in color, fine grained (grains all rounded) and consisting chiefly of black magnetite, red to pink garnet, green epidote, colorless zircon that fluoresces orange under the Mineralight, and a few grains of bluish chalcedony.

Beach Sand from Milford, Conn.

George Wahl, 36 Bedell Ave., Hempstead, L. I., N. Y., has donated a nice sample of beach sand from a beach on Long Island Sound at Milford, New Haven Co., Conn. This is a medium grain, gray sand, consisting chiefly of quartz (colorless, white, brown) and schist (gray, greenish) with very little black magnetite.

Quartz Sand from Lake Lona, Florida

Mrs. George C. Barclay, 119-27th St., Newport News, Va., has sent R & M a nice sample of sand that comes from Lake Lona, Columbia Co., Fla. (7 miles west of Lake City on U.S. 90). This is a fine grain light gray all pure colorless quartz sand.

River Sand from Chapel Point, Md.

Phil Cosminsky, 509 Timberlane, Falls Church, Va., has donated a nice sample of sand that comes from the historic Potomac River at Chapel Point, Charles Co., Md. This river sand is dark gray, fine grained, and consists chiefly of quartz (colorless, smoky, brownish), black ilmenite, red garnet, a little black magnetite, and some colorless zircon that fluoresces orange under the Mineralight.

Black Sand from Falls Church, Va.

Mr. Cosminsky donated another sample, a black sand which he collected from a drainage ditch on Marshall Street, near Seaton Lane, in Falls Church, Fairfax Co., Va. This is a fine grained black and dark gray sand that consists chiefly of black ilmenite, colorless and brownish quartz, with some black magnetite and colorless zircon that fluoresces orange under the Mineralight.

Beach Sand from Virginia Beach, Va.

For this sample we are indebted to Rev. William J. Frazer, 625 Main St., Moosic 7, Penn. It was collected by Mrs. Ralph Bennie, Route 1-B, Norwood, La., who sent it to Rev. Frazer and who in turn sent it to R & M. In commenting on the sand, Rev. Frazer, who is Pastor of the Moosic Presbyterian Church, attached this most interesting paragraph to his letter of Jan. 30, 1952:

"Incidently, she (Mrs. Bennie) is the wife of one of the young deacons of this church, whose wedding service I read here last October. Both were Navy Ensigns, Mrs. B. has now resigned following her marriage. It was rather amusing, what happened—our church has a tower broadcasting system which is heard over most of the town. It is a Memorial to World War men and chime records are played at 6 p.m. each evening. The pre-wedding music and solos were broadcast, and many folks outside heard that; the system was NOT SHUT OFF (by an accident) so the whole wedding service was broadcast all over this little town. Never before did a couple have so many "witnesses" to their I DO'S."

Virginia Beach in Princess Anne Co., and on the Atlantic Ocean, is Virginia's most popular beach. The sand collected by Mrs. Bennie is fine grained, dark gray, and consists entirely of quartz (colorless, brownish, smoky).

Beach Sand from Plymouth, Mass.

Historic Plymouth Beach, at Plymouth, Plymouth Co., Mass., is one site in eastern U. S. that we have never visited, but we have a nice sample of sand from the locality, thanks to Mrs. Emily Bourne Karolack of Peekskill, N. Y. Mrs. Karolack is not a collector of sands nor minerals; she is a cousin of the Editor and just had to collect some sand for us when she and her husband visited the area last July.

This beach sand is gray in color, coarse grained, and consists entirely of quartz (colorless, milky, smoky, brownish).

Black Sand from Price's Ranch, Mont.

Howard V. Hamilton, 187A Franklin Ave., Vandergrift, Penn., sent us not too long ago a nice sample of black sand that came from Price's Ranch, near Hamilton, Ravalli Co., Mont. This is a fine grained black sand consisting chiefly of black

ilmenite with some black magnetite and a little red garnet.

Beach Sand from Sea Island, S. C.

A most interesting letter dated Jan. 28, 1952, has been received from C. W. Sandifer, 5 W. 63rd St., New York 23, N. Y. It reads as follows:

"I think you might be interested in having a sample of sand from one of the old and historic localities in South Carolina, known as the Sea Islands, and lying along the low coast of the State.

"This sand comes from one of the hundreds of islands dotting this locality near Beaufort, S. C., and washed by the tides twice a day. Beaufort is located on Port Royal Island, and is only a few miles from the Atlantic Ocean.

"At one time it was noted for its Sea Island Cotton, and later was the center of the Phosphate Mining Industry where this rock was dredged from the salt water river beds and also mined from the adjoining lands. Although the industry moved to Florida there are still large deposits underlying most of this section.

"The sample of sand mailed to you was deposited at the top of the beach and appeared to be in a separate layer or bed from the other beach sands perhaps indicating a higher specific gravity. Some yellow grains a litt'e heavier than the quartz (?) might indicate that they are monazite, but this is only a guess. However, the Geological Survey recently announced the finding of deposits of monazite, extending several hundred miles through the Southeastern States.

"It is certainly a pleasure to send this little contribution and I hope it may interest you."

This is a fine grained brownish sand consisting entirely of quartz (brownish, smoky and clear). It comes from a small island near Beaufort, Beaufort Co., S. C.

Black Sands from Alaska

Hugh McCrory, Platinum, Alaska, has sent R & M a nice sample of black sand from the noted platinum-bearing deposits at Platinum, Goodnews Bay District, Alaska. The sand is brownish-black in color, fine grained, and consists chiefly of magnetite (black) with black sands of ilmenite and chromite, with fine colors of native platinum (steel gray), native gold (yellow), and some quartz (brownish, red carnelian, golden citrine, etc).

Garnet Sand from Canada

From W. A. Scotchmer, 4645 Meadowbrook Rd., Niagara Falls, N. Y., we have received a nice sample of garnet sand which he collected from Muskoka Lake, near Balla, Ont., Canada. It is a fine grained reddish-gray sand and consists chiefly of red garnet and quartz (colorless and white) with a little magnetite.

Volcanic Dust from Martinique

One of the world's worst volcano tragedies was the most frightful eruption of Mount Pelee on the Island of Martinique in 1902, which killed 30,000 persons. Martinique is a French island in the West Indies and Mount Pelee, its highest peak, is 4,900 feet above sea level. This mountain was described in the Nov. 1944 issue of R & M, p. 348.

Minerals Unlimited, 1724 University Ave., Berkeley 3, Calif., has sent R & M a nice sample of volcanic dust from Mount Pelee. Judging from the old label attached to the glass vial, the dust may have been collected shortly after the terrible eruption. The dust is dark gray in color and is made up of particles of volcanic dust, as its name implies.

Zircon Sand from Nigeria

Plummer's, of 2183 Bacon St., San Diego 7, Calif., has donated to R & M a nice sample of zircon sand which comes from the Naraguta tin fields, near Jos, Bauchi Province, Northern Nigeria, West Africa. This is a dark brown fine grained sand consisting entirely of minute zircon crystals and crystal fragments; the zircon fluoresces orange under the Mineralight.

Residual Sand from South Africa

Ernest M. Skea, Box 46, Pilgrims Rest, Transvaal, South Africa, has sent R & M an assortment of interesting sands one of which is a residual sand from Pretorius Kop Rest Camp, Kruger National Park, Transvaal, South Africa. His letter of Oct. 28, 1951, tells us that "The Park, in eastern Transvaal, is the largest national park and greatest wild life sanctu-

ary in the world atrtacting thousands of visitors yearly. Pretorius Kop is in the southern part of the Park and one of the camps nearest to Pilgrims Rest." This is a coarse, brownish quartz sand (colorless, smoky, and stained brown by limonite). It is a residual sand after sandstone.

Another sample sent in by Mr. Skea is a residual sand from Kowyn's Pass, Graskop, Transvaal, South Africa. His letter of Oct. 28 informs us that the Pass is in eastern Transvaal and the sand results from the Berg Sandstone which forms the great Eastern Escarpment, overlying the granites of the Drakensbergen (Mountains of the Dragon) on which both Graskop and Pilgrims Rest are situated. This is a gray, medium grained sand and consists entirely of colorless translucent quartz.

COLLECTOR'S COLUMN

Conducted by A. CAL LECTOR

This column, designed to be a help to beginners in Mineralogy, began with the September-October 1948 issue. In the last issue we studied fluorite. This time our subject is galena, the most important mineral of lead — one of man's most useful metals. Lead is one of the seven metals known to man from earliest times. Lead played an important role in bringing this column to the reader — it is alloyed with antimony and tin to form type metal.

Galena

Galena, the sulfide of lead, was named from the Latin "galena," a term applied to lead ore. Galena can be quickly recognized by the lead-gray color and streak, the brilliant metallic luster, the perfect cubic cleavage, and the great weight. The specific gravity of galena is 7.5, that is, 7.5 times as heavy as an equal volume of water. It is a soft mineral, 2.5 on Moh's scale of hardness.

Galena is one of the most common of the metallic sulfide minerals. It occurs in many different types of rocks all over the world. Galena is found in fine cubic crystals, occasionally as cubes modified by the octahedron and less frequently as octahedral crystals. It is found in large veins and masses, sometimes cleavable, and sometimes granular. The granular galena usually carries silver making it more valuable for silver than lead. Silver-lead mines at Laurium, Greece, were worked in ancient times, one reference indicates it was before 560 B.C.

Fine specimens of galena may be obtained from so many localities that only a few occurrences will be mentioned. In an unusual pegmatite formation in Greenland, one finds galena associated with siderite in cryolite. High temperature veins near Broken Hill, New South Wales, Australia, have galena, feldspar, and garnet mixed together. Large replacements of limestone are found in Mexico at Santa Eulalia. Many localities in Europe furnish fine crystals — Germany, England, and Sardinia are a few.

In the United States, one of the best known localities for galena is the Tri-State mining district. This embraces Picher (Oklahoma), Baxter Springs (Kansas), and Joplin (Missouri), where the mineral occurs with calcite, sphalerite, chalcopyrite, and marcasite in solution cavities in limestone and chert. Large vein deposits, valuable for their silver, are worked at Leadville, Colorado, and Park City and Tintic districts in Utah. The Coeur d'Alene district of Idaho furnishes interesting specimens of galena with its alteration products cerussite and anglesite. A nice specimen shows up occasionally from the fluorite mines of southern Illinois.

Galena should be one of the very first minerals in a collection—get some today!

Cupboard Filled to Overflowing!

Editor R & M:

I have now been collecting rocks and minerals for one year and the old cupboard I use for a mineral cabinet is overflowing, so I will have to hunt up something else to place the nice specimens which come by parcel post from all parts of the USA, thanks to Peter Zodac and his R & M.

Amel F. Priest
Peru, Iowa

Feb. 25, 1952.

CLUB AND SOCIETY NOTES

Attention Secretaries—Please submit neat copies. Give dates and places of meetings. Check names for correct spelling.

Cedar City Rock Club Death Valley Trip

In spite of promised storm and cold weather, 26 members and non-members of the Rock Club left Cedar City, Utah, Thursday and Friday for Death Valley, Calif. The caravan gathered at Indian Springs, Nevada, Friday noon. They traveled together to the ruins of old Ryolite, the famous ghost town on the edge of Death Valley, where the renowned house built of 50,000 whiskey bottles is located. The party scattered for the night, some of them staying in Beatty, others camping in the white sand dunes of the Valley's floor.

They met again Saturday morning at fabulous Scotty's Castle, located at the mouth of Grapevine Canyon, at an elevation of 3000 feet, and overlooking the long Valley. During the next two days, they journeyed down and across the Valley, visiting many points of interest, including Ubehebe Crater, an extinct volcano. In a matter of moments ,they traveled from below sea level to Aguerreberry Point, which has an elevation of nearly 7000 feet. and a breathtaking view of the desert, ringed by colorful, high mountains. From this point can be seen the lowest spot in the United States, 280 feet below sea level, and the highest point in the United States — Mount Whitney. They also visited 20-mule team canyon, and many other brightly colored canyons within the Valley, Zabriskie Point, the old Borax Mill ruins at Ryan, where centered in former years the extensive mining activities of a famous borax company, also a number of the resort hotels and inns. A luncheon stop was made by one of the old Stove Pipe Wells, which was developed by the pioneers.

The party decided that most of California had taken advantage of the long week end to visit Death Valley. Saturday night, along with some half a thousand other people, they failed to find cabin accomodations. However, those of the Cedar party who had brought camping equipment and home prepared food shared with those who hadn't, and camp was made at the old Furnace Creek Ranch. An enjoyable evening was spent around a huge campfire swapping yarns.

Sunday morning, a visit was made to a large date grove in the center of Death Valley and other points of interest. The caravan traveled together through Furnace Creek Canyon, via Death valley Junction, visiting the Amorgosa Hotel where they viewed a large rock collection containing many foreign specimens. The caravan broke up Sunday afternoon, with some of the members returning to Cedar City Sunday night, others visiting Las Vegas, Boulder Dam, and returning through the Valley of Fire near Overton, Nevada, Monday.

A number of very good rock and mineral specimens were brought home by some of the club members. Others in the party took pictures, both colored slides and movies, which will be shown at a meeting of the Rock Club in the near future.

E. W. Leigh, trip chairman, and his committee, were in charge of this very successful field trip.

Mrs. Ralph G. Jones, Sec'y
20 So. 200 East
Cedar City, Utah

Queens Mineral Society

The Queens Mineral Society held its first meeting of the new year and appointed the following members to serve as officers during 1952:

President, Mr. Theodore Fredericks; Vice President, Mr. Fred Hayden; Treasurer, Mr. Victor Pribil; Secretary, Miss Marie McKay.

The Society is planning its annual dinner for April 23rd at the Jamaica YMCA.

Marie L. McKay
111-20 106th St.
Ozone Park 16, L. I.
New York

Midwest Federation Convention

St. Paul, Minn.
July 1-3, 1952

Plans are under way to make the 1952 convention of the Midwest Federation of Mineralogical and Geological Societies a memorable event. The 12th annual convention will be held at Macalester College, St. Paul, Minnesota, on July 1, 2 and 3. It will be sponsored by the Minnesota Mineral Club assisted by the Geological Society of Minnesota.

An extensive program with exhibits of minerals, gems, fossils, geologic models, and lapidary equipment is planned. Nine states will be represented and most of the 26 member societies are planning exhibits. There will be mineral and gem identification and demonstrations of such instruments as a dichroscope, microscope, polariscope, refractometer and specific gravity balance.

William J. Bingham, 2100 Arcade St., St. Paul 6, is general chairman of the convention. Federation President is Mr. Hazen T. Perry, 2501 Girard Avenue South, Minneapolis, Minn., and Federation Secretary is Mrs. Oriol Grand-Girard, 817 Mulford St., Evanston, Illinois.

Loretta E. Koppen
Publicity

Newark Mineralogical Society January Meeting

Mr. Peter Kondrosky, of Elizabeth, N. J., spoke to members of the Newark Mineralogical Society at the 287th regular meeting on January 6th, 1952.

The lecture illustrated by a rare set of slides 75 years old, told the story of coal and included the development of mine lamps and mine safety equipment. Since Mr. Kondrosky grew up in the anthracite region of Pennsylvania and was actively engaged in mining for more than twenty years, his talk was liberally dotted with personal experiences that made his listeners more keenly aware of the romance of coal and the problems involved in mining it.

Mr. Kondrosky's interest in rocks began as a boy and was encouraged by his father, a miner, who often brought pyrite specimens home to the youngster. From this small beginning his collection has grown until it now numbers several hundred pieces and centers around coal specimens from all parts of the world.

Swap-Fest

Except for occasional trips to museums and scientific institutions, large scale winter outings for the Society have not been the rule so our energetic field trip committee decided to rouse us from our winter lethargy by arranging a swap-fest and proxy field trip which would get us out into the country and at the same time avoid the penalties of cold weather adventure.

A logical place seemed to be Touchon's in South Sterling, N. J. It is only a short drive from Newark, despite its rural atmosphere, and most of our members are familiar with it from seeking carnelian in the brook which runs across the property. The management was most cooperative and agreed to let us use an alcove of the dining room in return for any business they might pick up during our stay from one until five.

Saturday, January 26th, 1952, although not cold, proved to be a gloomy and moist day not at all in keeping with the bright plans made. Despite the fact that the field trip chairman, E. J. Talamini, was optomistic and certain that the Society would still observe its old custom of not being bothered by rain, it was obvious that the weather man was determined to make the Newark Mineralogical Society change its tune. By mid-afternoon the foul weather had been embellished with fog and it seemed to the one other member who had arrived early with him, that Tal's usually cheerful spirits dropped in direct ratio to the thickening of the pea soup outdoors.

About three cups of coffee, four hamburgers, a dozen pin ball games, two bags of potato chips and a ham sandwich into the afternoon, —at 3:30 to be exact — who should walk in but Bill Clinton, more welcome than any flowers that have bloomed in May! The writer was already present and had been too fascinated by the gastronomical achievements of our field committee chairman to mind the long vigil before Bill's appearance. Not long afterward, Mr. and Mrs. Ben Burns arrived and then in quick succession the Philip Lums, Mr. Washko and his son Joe, and Sarah Sherlock with her guests,—Mrs. Carpenter, Donald Carpenter, Jr., Margaret Sherlock and Emily Carpenter. Little "Emmie" Carpenter was affectionately greeted by those who remembered her good sportsmanship and fondness of berry patches and swimming holes during the big field trip to Vermont and New Hampshire last summer.

Exchange specimens were quickly set out and swapping was lively. Ben Burns had brought a molybdenite and peristerite from New England and a malachite from Griggstown, N. J. Bill Clinton displayed garnet, siderite and kyanite — all from Connecticut locations. The writer showed a celestite and a blue calcite, both from Canada, and a quartz geode from Kansas. Sarah Sherlock's material was much sought after for she had brought not only wollastonite and garnet specimens from Willsboro, N. Y., and jasper with specular hematite from Milton, Vermont, but also a generous supply of aragonite which she had collected at the Government Quarry in Bermuda.

It should be stated at this point that the Ben Burnses are mischievously inclined and not above letting twelve dyed-in-the-wool rockhounds enthuse at length over a tray of magnificently banded, colored and translucent agates and jaspers before casually admitting that instead of being quartz the pretty things were candy!

For the proxy field trip everyone was given a specimen of jasp-opal which had been collected late in the Fall at a quarry in Pennington, N. J. Since there appeared to be little else available at that location, the field trip committee decided that the quarry did not warrant a club outing and chose this method of distributing the one mineral found in abundance.

Everyone present served on the clean-up squad — picking up papers, carefully replacing table cloths, carrying dishes to the kitchen and putting tables back into place. After thanking the management for their kindness, members departed for home feeling that an afternoon of swapping can be fun, that it could well be repeated another year, and that perhaps swapping among congenial friends is an ideal way to spend an otherwise dreary winter afternoon.

February Meeting

A social afternoon had been planned for the 288th regular meeting of the Newark Mineralogical Society on February 3rd, 1952.

When President Albert S. White called the meeting to order, Richard Milburn presented him with a gavel more suitable for use in a mineralogical society than the one generously supplied by the Newark Museum. Mr. Milburn

had made a gavel in the form of a mineral hammer, the head being fashioned from mahogany. The membership were as pleased with this practical bit of whimsey as Mr. White himself.

During the short business meeting which preceded the program, Mr. White introduced two officers of the Eastern Federation of Mineralogical and Lapidary Societies — Mr. H. L. Woodruff, President, and Mr. B. J. Chromy, Secretary. Mr. Woodruff spoke briefly about the Federation's progress and its objectives for the present year. As an affiliated society we were delighted to hear that a directory of members is being compiled and that something in the way of a Federation publication is in the offing.

At the close of Mr. Woodruff's talk, Mr. White turned the meeting over to Wesley Hayes, program chairman, who had requested us to come prepared to tell a tall story, exhibit one good mineral specimen, and exchange another.

Several tall stories were told and they got taller as they went along, it was not hard for judges Sarah Sherlock and Mr. Henzy to determine which was the most fantastic. It was decided that Edwin Skidmore's yarn about a magnetite crystal forming in the cylinder head of a car was the best offered. His prize was a witherite specimen from Lexington, Kentucky.

Judges Forester Newick and Ferdinand Ward had considerable difficulty in determining which of the displayed specimens was the best one. Each collector had brought in an excellent piece, and as some members have noteworthy collections the display table resembled a corner of a discriminating museum. Choosing a winner from mineral candidates such as the diamonds submitted by John Albanese and the crocoite belonging to Louis Reamer, to name only a few, was not an easy task. It was finally decided that Leonard Morgan's barite xl on a martix of quartz xls should be the winner. Mr. Morgan's prize was a celestite from Clay Center, Ohio.

In the exchange contest, each member submitted a wrapped piece and drew one in exchange. Ben Burns acquired the poorest exchange and was consoled with a fine pectolite from Paterson, N. J. Judges for this contest were Edwin Skidmore and B. J. Chromy.

The prizes were furnished by Mr. Hayes and the Society was grateful both for his generosity and the pleasantly unusual program he provided.

Lucy S. DallaValle
Publicity Chairman
2 Jefferson Ave.
Maplewood, N. J.

Los Angeles Lapidary Society

At a recent meeting of the Faceteers group of the Los Angeles Lapidary Society, Les Benson from the Gemological Institute gave an interesting lecture on Diamond Mining and illustrated his talk with slides.

The Society will have a display at the Rockhound Fair at Palm Desert on Feb. 23 and 24 in the Desert Magazine Building.

They will also participate in the 4th Annual California Hobby show from March 21 to 30, to be held at the Shrine Convention Hall, Los Angeles, California.

February Meeting

The Los Angeles Lapidary Society, for a change from Lapidary, went on a Cave exploring trip via beautiful colored slides shown by Hugh L. Mills and Kep Porter from the Pasadena Grotto of the National Speleological Society.

The pictures covered caves in Virginia, Nevada, and California. Some were the Titus Canyon Cave with its beautiful "Aragonite Crystals" that are out of this world; the Soldiers Cave in Sequoia Park, with all its different colors; the Devils Hole in Nevada with its huge swimming hole, that water at all times being around 90 degrees.

Hugh Mills explained the difference between a Speleologist and "Spelunger." The Speleologist is the person that does the scientific work, while the "Spelunger" goes for the fun and thrill of never knowing what is around the next bend. He also explained that they map the caves which gives them a good idea of their shapes. and photograph them so they can see what the caves look like because under their carbide lights the colors are deceiving.

They stress safety, are always well equipped with safety equipment, always advise that not less then three people should go on a trip, and they are very much against vandalism in caves.

Claire Schoeder
Pub. Chairman
P.O. Box 2184, Terminal Annex
Los Angeles 54, California

Gem Collectors' Club

The Seattle Gem Collectors' Club heard Adoph Kietz, the retiring president, give an excellent talk on "Dyeing of Agate" at the January meeting. From his collection he exhibited pieces of German dyed agate as well as some which he had successfully dyed. The following people were elected to office that evening: Mrs. Ralph U. Gustafson—President; C. G. Nelson—Vice President; Mrs. R. H. Allen—Secretary; Clarence L. Spear—Treasurer; and Herman Witte as board member. Mrs. R. C. Goodman, Mrs. W. L. Larson and R. H. Allen other members of the Board of Directors.

Mrs. Ralph U. Gustafson
President
9719 19th N. E.
Seattle 5, Wash.

New York Mineralogical Club

The New York Mineralogical Club held a field trip to the limestone quarry at Sparta Junction, N. J., by chartered bus on Sunday, October 28, 1951, sixteen attending. Although the weather was not of the best, those who went had a good time and collected a variety of nice specimens including calcite,, scapolite, spinel. sphene' biotite, tremolite, fluorite, pyrite, chondrodite, norbergite, allanite, tourmaline, graphite, orthoclase, quartz, asbestos, serpentine, phlogopite and actinolite. This locality is recommended since the quarry is actively operated and the minerals are fresh, but advance permission from the owners should always be obtained, The Limestone Products Corporation. Mr. C. Burnett Freas, superintendent. Reference: ROCKS AND MINERALS, Vol. *23,* p. 818, Sept.-Oct., 1948.

Future Club excursions will be held in June or September by reason of a better expectation of favorable weather.

November Meeting

A regular meeting of The New York Mineralogical Club was held at 8 P.M. in Room 403 at Schermerhorn Hall, Columbia University, New York City, Wednesday evening, November 21, 1951, with president Leo Yedlin presiding.

On motion of the president, it was regularly moved and seconded that the Club send Christmas and birthday greetings to Mr. William T. Bather of Nutley, N. J.. on the occasion of his 90th birthday. It is thought that he is now the oldest member of the Club.

Dr. Holmes then discussed the nature of Styrian jade or pseudophite, which is not jade or serpentine, but a compact variety of chlorite.

The president announced the gift to the Club by a former active member, Mr. Philip Cosminsky, now V. P. of The Mineralogical Society of the District of Columbia, of a beautiful gavel in the form of a geologist's hammer made by the donor from black walnut and hickory. It was moved and seconded that the thanks of the Club be extended to Mr. Cosminsky for his beautiful, useful and appropriate gift.

The speaker of the evening, Mr. Ira K. Hearn of the Quebec Iron and Titanium Corporation, was then introduced and gave a comprehensive and most interesting talk on the company's titanium iron deposit put into production last October after six years of exploration and development.

The original discovery was made in 1941, north and near Havre St. Pierre, Quebec, a small fishing village on the St. Lawrence. Following a magnetic survey and other exploration work. it became necessary to construct a railroad from the river to the mine situated on Lac Tio where 125,000,000 tons of ore averaging over 35% of TiO_2 and 40-45% of Fe_2O_3 occurs — enough for a hundred years, half on the surface, at great expense and labor. Lakes had to be drained, rivers bridged and an immense ditch dug and ballasted through the muskeg for the right of way. The Romaine and Pajon rivers had to be bridged, inclusive of 500,000 cu. yd. of fill, a quarter of a million cu. yd. of muskeg removed, and 850 ft. tunnel bored, the temperature being sometimes 50° below 0°F.

At the shipping point on the river, a new townsite had to be provided for the old homes. A unique loading devise was built having a loading capacity of 2000 tons an hour directly into ocean cargo boats.

The metallurgical development was carried out by the New Jersey Zinc Company, the smelter being built at Sorrel near Montreal. This plant. which was a major expenditure, has a capacity of 1500 tons of ore a day with five electric furnaces. Power aggregating 160,000 H.P. at a tension of 250,000 volts is brought from Shawinigan Falls, a distance of 150 miles.

In 1950, operating months, 175,000 tons of iron was produced, and 24,000 tons of slag containing 70-75% of TiO_2.

The lecture was illustrated with numerous lantern slides which graphically depicted the formidable difficulties overcome in building the railroad across the wilderness from river to mine.

Social Meeting

A social meeting of The New York Mineralogical Club was held on Wednesday evening, December 19, 1951, at 8 P.M., in Room 301, Philosophy Hall. Columbia University, which was very much enjoyed by all who attended, since ample time was available for chattering, discussion and argument, all dear to the heart of the collector.

Dr. Frederick A. Stenbuck gave an informal but informative travelogue of some of his western collecting trips, beautifully illustrated with Kodachrome projections which effectively took everyone out of this eastern winter world. Refreshments were then served, and soon a little group of music lovers were gathered around the piano entranced by the extemporaneous and gifted playing of Mrs. Helen Yedlin.

It was one of those evenings which one likes to long remember.

O. Ivan Lee,
2684 Boulevard
Jersey City 6, N. J.

Austin Gem and Mineral Society

Led by Dr. Keith Young of the Field Trip Committee, and E. A. King. club president, 46 members of the Austin Gem and Mineral Society collected selenite crystals and fossils in the Bastrop-Smithville area of eastern Texas on March 2, 1952.

Western Nebraska Mineral Society

The Western Nebraska Mineral Society held its regular meeting Monday evening, Feb. 4th, 1952, in the basement of the Chappell Memorial Library. There were 25 members and 9 guests present. The guests were Mr. and Mrs. Clarence Kripal of Lodgepole, Mr. and Mrs. L. G. Nelson, Mr. and Mrs. Fred Nellen, and Mrs. Ruth Criswell of Chappel, and Mr. Eckman and Mr. M. E. Sharp of Haxtun, Colorado. Business meeting was short and snappy. Our program was ably handled by Mr. E. P. Chipman and Mr. A. M. Leafdale of Sidney. With the generous loan of 2 microscopes from the Ohio Oil Co. of Sidney and 1 from the Geuel County High School of Chappell, we spent the evening profitably examining rock and mineral section specimens microscopically. All members voted the program highly interesting and educational.

At the close of the program, a delicious lunch of coffee and cookies was served by Mr. and Mrs. Lee Clark of Chappell.

March Meeting

The regular meeting of the Western Nebraska Mineral Society was held March 4, 1952, in the basement of Chappell Memorial Library. There were 14 members present. New members are Mr. and Mrs. Fred Nellen of Chappell and Mr. and Mrs. Clarence Kripal of Lodgepole.

Annual election of officers resulted in the following: President, Emmett Soule of Chappell; Vice president, E. P. Chipman of Sidney; Secretary Treasurer, Mrs. Walter Peck of Chappell; and new board member, Paul Bergstrom of Chappell.

Mrs. Geo. Peterson of Chappell gave a paper on the origin of the Earth's soils, and also a description of the famous rock garden on Vancouver Island.

Luncheon was served by Mr. and Mrs. Walter Peck.

G. W. Brooks
Gen. Delivery
Chappell, Nebraska

Fort Worth Mineral Club

The Forth Worth Mineral Club held its regular meeting at 7:45 Friday evening February 1, 1952, at 721 Hemphill Street.

Election of officers for 1952 was held and the following were elected: Miss Millicent Renfro, President; Mr. Casteevens, 1st Vice President, Mrs. Shannon, 2nd Vice President; Mr. Rigney, Secretary; Mrs. Wilson, Treasurer.

The 1952 Texas State Mineral Show which will be held in Fort Worth May 2nd, 3rd and 4th, was discussed and a committee of five was appointed to make further arrangements for the show.

Fred L. Mills
Publicity for the Society
108 N. Commerce St.
Fort Worth 2, Texas

Boston Mineral Club

The Boston Mineral Club announces their new officers for 1952. President, Mr. Gerald Krumm; Vice Pres., Mr. Francis S. Andrews; Cor. Sec'y., Mrs. Lillian Halliburton; Rec. Sec'y., Mrs. Frances Caldwell; and Treasurer, Mr. Walter Chick.

The club meets regularly from Sept. to June on the first Tuesday evening of the month at Boston University, College of Liberal Arts—Room 12, 725 Commonwealth Ave., Boston, Mass. Occasionally, meetings are held in the Geological Lecture Hall, Geological Museum, Harvard University, Oxford St., Cambridge, Mass.

Following a short business meeting the club offers an interesting speaker on minerals or related subjects. In January, Dr. Clifford Frondel of Harvard, spoke of some collecting experiences in Sweden. In February, Dr. Alonzo Quinn, of Brown University, told of collecting and mineral deposits of Rhode Island. The club's display cabinet is used each meeting to show a particular mineral designated in advance and specimens are provided by the membership. Time is allowed for examination and discussion. The club is always pleased to welcome guests or new members.

The President, Mr. Krumm, 46 Mountfort St., Boston, Mass., will be glad to give anyone further details.

Frances Caldwell
Recording Sec'y
39 Hayes Street
Arlington 74, Mass.

Georgia Mineral Society

The January meeting of the Georgia Mineral Society was held on the 14th in the new geology building at Emory University, with President Romeo Martin presiding.

This was the second recent meeting of the Society on the Emory campus and members have learned to gather early in order to have time to see the extensive exhibits of minerals and gems on display before the meeting begins. Attractive, well-lighted, dust-proof cabinets show off the mineral specimens to better advantage than is usually found in museum collections. Cabinets of showy minerals line the entrance way on two sides and lead into hallways flanked with further displays of minerals, gems, and fossil specimens.

The program feature of the January meeting was provided by Miss Janie Morris who showed Kodachrome slides of beautiful gems and minerals in the Harvard University Museum.

It was felt that the Society had made a good beginning in the study and appreciation of minerals for the year.

Erna L. Mason
Corresponding Sec'y
Dept. of Public Health
Atlanta 3, Ga.

Cincinnati Mineral Society August Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held Wednesday, August 29, 1951. at the Cincinnati Museum of Natural History, Cincinnati, Ohio. Mr. Grover Hubing, Vice President, presided at this meeting in the absence of our president, Mr. Ralph Clark.

Mr. Hubing welcomed the following persons as guests, Mr. James Montague, Mr. Paul Nolan Caravetta of Chicago, Roy Grossman and Mr. Grossman and Nancy Sue Ullmer.

After the reading of the minutes of the previous meeting and the Treasurer's report, Mr. Gschwind presented various communications from dealers and collectors throughout the country Mr. Gschwind also raised discussion of gaining wider acceptance and larger membership thru increased publicity with displays and newspaper articles.

This discussion brought about appointment of Mrs. James Fox to follow up on newspaper publicity. Mr. Dudley Levick was appointed to investigate the possibility of obtaining space in some of the downtown business houses, principally the Fifth-Third Bank and Gas & Electric Co., for window space.

Mr. Harry Woodward spoke of a display he is currently exhibiting at the College Hill Public Library. Permission was granted to label this display in the name of the Society, provided that material was properly labeled and identified.

The meeting proper was devoted to a discussion of unidentified minerals from members collections. Some of these minerals presented problems and the knowledge of our best heads together with various physical tests were required to establish positive identification.

A field trip to eastern Ohio collecting areas was announced by Mr. Gschwind, who planned and will conduct the trip.

September Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held Wednesday, September 26, 1951, at the Cincinnati Museum of Natural History. President Ralph Clark opened the meeting with a warm welcome to our guests Mr. and Mrs. Ralph Abbott, Mr. James Montague and Mr. Louis von Walden. Our Treasurer, Frank Atkins, advised that we were in the black with a balance of $17.50 in the treasury which did not include a sum set aside for the Youth Award for museum students. Mr. Atkins was also to check with museum director upon type of award and time of awarding.

Mr. Dudley Levick, reported no success in securing display space, but had several leads to check on. Mrs. James Fox, although unable to attend this meeting, reported having established contact with some one of the papers and that further developments would follow.

Warren Wells has taken a teaching job which will prevent him from attending meetings, so Mr. Clark will assume responsibility of opening and closing the museum on meeting nights.

Mr. Gschwind took the liberty of reading excerpts from an article by Mr. John Pagnucco of the Chicago Rocks and Minerals Society. written for their publication THE PICK AND DOP STICK. These remarks concerning the obligation of a society to its members and the mineral world and also obligations of members to their society, were particularly pertinent to our society. Mr. Gschwind also discussed and reviewed basic rules and courtesies as concerns "Quarry Etiquette." This discussion was prompted by an article in ROCKS AND MINERALS, by a fellow collector in a nearby city who pointed out to collectors as a whole that certain basic privileges and courtesies were being violated when in the field, thus endangering future collecting. There seemed to be an implied reference to our Society in this article. Mr. Gschwind personally contacted both owner and operator of the quarry involved and was assured that our Society was not involved. Further, that should collecting be denied to other persons or groups, the Cincinnati Mineral Society would continue to enjoy these privileges.

Mr. Carl Wiegand was presented as our member speaker for this meeting. Mr. Wiegand covered in his talk a trip to the west involving some 6,300 miles. His talk was well illustrated with excellent color slides.

Highlights of the trip were a visit to the famous "Molly Kathleen" Mine at Cripple Creek, Colo. This is now operated only as a tourist attraction, it has some 20 miles of underground passages made in mining of high-grade gold telluride. The establishment of the gold standard at $32.00 an ounce under present day economic conditions makes gold mining an unprofitable venture, consequently there is little activity at any of the gold mines. Only the eternal optimist, the prospector, still plods on hoping for the big strike. Most mines are at present block leased to miners with everything but food and pay furnished. in return the mines receive one-half of all gold mined.

The gold telluride exists as a highly disseminated particles in a fluorinated limestone. An excellent specimen of limestone containing native silver was collected hereby by Mr. Wiegand.

Visiting Gold Point. Nevada, proved interesting to Carl as he noted a rather large deposit of scheelite near the gold mine, which tests about 1 per cent tungsten. There is no native gold here and silver is present but not in a native state.

At Ione, California, Carl visited the peat mines which were of particular interest to him. The peat is used here to recover certain waxes in it. Chief wax recovered using the

Benzol Solvent Process is Montan wax which is quite hard and takes a fine polish; it is used to manufacture polishes, carbon paper, films, and some inks.

A short discussion followed Mr. Wiegand's talk, then the meeting was adjourned.

October Meeting

The regulam monthly meeting of the Cincinnati Mineral Society was held Wednesday, October 31, 1951, at the Cincinnati Museum of Natural History. President Ralph Clark opened the meeting with a welcome to our many guests, Mr. and Mrs. John Pagnucco. Mr. and Mrs. Harry Grill, Mr. Jacob Skilken, Mrs. C.L. Perry and daughter, Elaine and Mr. W. F. Plohr.

Mr. Clark reported for Mr. Atkins on awards for the museum classes. To the Geology classes 3 prizes to be given twice yearly, cost of any prize not to exceed $2.00. To the polishing class 1 prize twice yearly, total cost not to exceed $10.00.

Past Presidents Frank Atkins, James Clements, Edgar Sarles and Charles Gschwind were appointed as nominating committee to select candidates for office in 1952.

Holiday conditions made it necessary to change meeting dates for November and December, namely November 28 and December 19. Members were advised of new amendments to our constitution to be presented for vote and discussion at the next meeting.

Mr. Sarles reported briefly upon the weekend field trip to Brown County, Indiana, and Bloomington. This trip though poorly attended was most enjoyable and successful to those who did attend.

Dr. and Mrs. Gerald M. Friedman were accepted as members to our Society at this meeting.

President Ralph Clark was our speaker for this evening. Mr. Clark spoke on the "Black Hills" of South Dakota, a subject for which he was well qualified by virtue of having visited and studied this region repeatedly.

Highlights of this talk were as follows: The region is charactrized by an uplift of Pre-cambrian gneiss and schists, overlain by Paleozoic and Mesozoic sediments. The sediments are now badly eroded leaving the Precambrian material exposed and causing the region now known as the "Black Hills."

Activity in this region mineralogically started with the discovery of gold in 1875 at French Creek. Of the numerous placer and hard rock mines which once flourished, there now remains very few of which the Homestake mine is the largest. Mr. Clark used the town of Blue Bell, southeast of Custer, S. D., as a base of operations. This made it easy to visit and collect at the Feldspar mines at Custer. The "Etta" mine at Keystone, famous spodumene producer, was also within easy reach. At Tin Mt. mine, cassiterite and lithia mica were to be found. At Wind Cave and Pringle, box-like casts of aragonite were found together with stalactites and stalagmites of aragonite. About 30 to 40 miles north of Custer, small mines were working in quartz veins for gold. Mining of pyrites is also conducted for smelting of the gold.

Remains of attempts to mine copper and silver were seen 50 miles northwest of Custer and azurite and malachite etc., were in evidence.

At Deadwood, S. D., tungsten ore, cassiterite pebbles, galena and sphalerite were found. At Roachford, bog ore and gold smelting. At Hot Springs, selenite, bentonite, and rock gypsum were found. Buffalo Gap produced faulted sandstone, at the Scott mine, beautiful rose quartz, with beryl being thrown aside.

Mr. Clark did an excellent job on the Black Hills and is to be complimented for his study of the region.

Mr. E. T. McCarthy and Mr. Gschwind presented surplus minerals from their field trips, to the Society for sale at nominal prices to members. This increased our treasury and gave members a chance to get good material at extremely low prices.

November Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held Wednesday, November 28, 1951, at the Cincinnati Museum of Natural History.

This meeting was opened and presided over by President Ralph Clark. Mr. Clark welcomed as guests Mr. C. C. Long and daughter, Miss Persis Long. Mrs. C. L. Perry and daughter, Elaine, Mr. and Mrs. John Pagnucco and Mr. and Mrs. Jacob Skilken.

The nominating committee presented the following ballot of officers for 1952: C. L. Gschwind, President; Dudley Levick, Vice President; E. T. McCarthy, Secretary; James Gibbs, Treasurer. Mr. McCarthy declined nomination so alternate Fred Keitel was proposed. The Society accepted this ballot closing nominations and voted unanimously for this ballot.

Mr. Gschwind presented for vote several amendments to the Society's by-laws, namely establishment of permanent committees, program membership, publicity and field trip committees were under consideration together with listings of functions of each committee. After discussion these amendments were accepted by vote. An amendment was proposed to increase dues to $5.00 with provisions for penalties concerning non-payment of dues. This was rejected and a proposal to alter existing dues by-law to increase dues to $3.00 with no provision for non-payment of dues; this was accepted by vote.

President Clark announced that the December meeting is to be a supper meeting at Grammers Restaurant on December 19, 1951.

Mr. Sarles announced the public relations activities of the Ohio Geological Survey, being conducted by Mr. Brown of the Survey. Mr. Brown may visit our next meeting.

Our speaker for the evening was Mr. Dudley Levick. Mr. Levick chose as his subject "Old Collecting Areas in the Eastern United States." Mr. Levick personally collected in most of the areas he discussed. These areas centered around Philadelphia and much of eastern Pennsylvania. Areas in New Jersey. New Hampshire and Vermont were also discussed. Mr. Levick was most generous in his distribution of surplus material from these areas. Thanks to Mr. Levick for a fine talk.

December Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held Wesdnesday, December 19, 1951. This meeting was the annual Christmas Supper Meeting which was held at Grammers Restaurant, starting at 6:30 P.M.

We were fortunate in obtaining some excellent upstairs rooms which gave us privacy and made for an excellent evening.

Regular business of any nature was dispensed with and a good old gab fest was held during and after the dinner.

Mr. and Mrs. Ralph Clark did an excellent job of table decorations and played Santa Claus in having little gifts of many mineral specimens for all present. Mr. and Mrs. James Fox were also in the role of Santa Claus presenting a lovely little tree, and many fun-making gifts.

C. L. Gschwind
Secretary
6931 Diana Drive
Cincinnati 24, Ohio

FREE SERVICE TO ROCKHOUNDS

The Arkansas Mineralogical Society extends an invitation to members of all mineral societies to visit their headquarters when in Arkansas.

Free information will be given regarding minerals and their locations, and, guides will be furnished free to groups of collectors or students. Arkansas Mineralogical Society, Phone 354, Richard Buhlis, Sec'y. 2206 Central Ave., Hot Springs National Park. Ark.

Austin Gem & Mineral Society

Eighty-five members of the Austin Gem and Mineral Society (Austin, Texas), hunted garnets on the January field trip led by E. A. King, President.

At the February meeting, Mr. Martin Kermacy, assisted by Dr. Stephen Clabaugh, discussed "The Quartz Minerals." The discussion was illustrated with specimens from their collections, as well as from the collections of J. J. Brown, Emil H. Spillmann, and W. L. Darnall.

On February 23 and 24, the Club will have an agate hunt near Laredo, Texas, and on March 2, the group will hunt fossils and selenite under the leadership of Dr. Keith Young.

Fort Worth Mineral Club

The Annual Meeting and Mineral Show of the State Mineral Society of Texas will be held at the Pioneer Palace in the grounds of the Municipal Auditorium at Fort Worth, Texas, May 2nd, 3rd, and 4th, 1952.

The final arrangements are now being made for the show by the officers of the State Society and of the Forth Worth Mineral Club, hosts to the State Membership at large.

Collectors, exhibitors, and dealers of minerals and lapidary equipment, lapidists, and manufacturers of lapidary equipment and supplies are invited to display and demonstrate material, specimens and equipment. Table space may be reserved not later than April 1st at the rate of six dollars ($6.00) for a six foot space for the three days. The Pioneer Palace will open May 1st and 5th for setting up and taking down the displays. There will be plenty of free parking space adjacent to meeting headquarters. Tourist courts, hotels, and good cafes are within easy distance.

This will be a very worthwhile meeting and every one is extended a cordial invitation to attend.

Those interested in more detailed information may address the Forth Worth Mineral Club, 721 Hemphill Street, Forth Worth, Texas.

Millicent A. Renfro
Dir. State Mineral Society
President
Fort Worth Mineral Club

Mineralogical Society of Salt Lake City

The Mineralogical Society of Salt Lake City elected the following officers for 1952 at their regular meeting held Jan. 8, 1952:

President, W. T. Rogers; First Vice President, Prof. J. J. Hayes; Second Vice President, Charles W. Lockerbie; Secretary, Ora Rew Alt; Treasurer. Mary Moorhead.

Ora Rew Alt, Sec'y
424 A St.
Salt Lake City 3, Utah

Syracuse Mineral Club

The Syracuse Mineral Club held its regular meeting Jan. 11, 1952, in the Lyman Hall Museum, Syracuse University, Syracuse, N. Y. Election of officers was held with the following results:

President, R. L. Sylvester; Vice President, Sheldon W. Towne; Secretary-Treasurer, Elizabeth Henes; Assistant Secretary-Treasurer, Marjorie H. Thorpe.

The speaker was W'm. Francis whose subject was on collecting in California and Mexico. Movies in color and sound on British Columbia were shown by the President.

Those interested in attending a meeting or in joining the Club should contact either the President. Mr. R. L. Sylvester, 154 Parkside Ave., Syracuse 7, N. Y., or the Secretary, Miss Elizabeth Henes, 208 Tamarack St., Liverpool, N. Y.

Yavapai Gem and Mineral Society

"Crystal Chemistry" was the topic of a talk given by Arthur Still, of Southwestern Geological Service. at the meeting of the Yavapai Gem and Mineral Society held Monday evening, January 7, 1952, in St. Luke's parish house, 114 South Marina, Prescott, Ariz. The speaker, who is chairman of the Yavapai council of the Arizona Small Mine Operators Association, greatly impressed his hearers with the knowledge he displayed. A blackboard and atomic chart served to illustrate his subject.

Crystal chemistry, Still said, is a modern science 40 years old. It is definitely related to mineralogy. "The discovery of X-rays in 1895, by Wilhelm Conrad Roentgen," he added. " and the discovery of X-ray defraction in 1912 by Von Lave first made the study of internal structure possible. Much important work was done prior to this, many important concepts formed and laws derived, but the earlier period is mainly one of description of the external features of substances."

The speaker went on to say that matter is composed of elements ("an element is a substance which cannot be decomposed or built up from simpler substances") and compounds ("consisting of a substance composed of two or more elements"). An atom of an element, he said, is the smallest particle of that element which can exist. Atoms combine to make molecules, which in turn combine to make compounds.

Still described the composition of the atom, saying that it consists of a nucleus and an extra-nucleus structure. The nucleus is very small compared to the atom as a whole but contributes nearly all of the mass. It bears a positive charge and is surrounded by a series of electrons (negatively charged particles) arranged in a series of orbits or shells. The arrangement of the electrons in these shells determines the chemical properties of the atom concerned. With the exception of the first orbit (with two) the atoms strive for a configuration of eight electrons in the outer orbit.

Atoms, he continued, through the "urge" to gain an outer configuration of eight electrons, may either lose or gain electrons. Those which lose electrons become positively charged equal to the number of electrons lost, and are termed, in a broad sense, metals. Those which gain electrons become negatively charged with a charge equal to the number of electrons gained, and are termed non-metals.

Crystal chemistry, Still added, in its widest sense may be defined as the relationship of the internal structure of a body to its physical and chemical properties. It is primarily concerned with crystalline substances but also entails, to a lesser extent, liquids and gases. A crystalline substance is one having an orderly internal unit of structure. These units of structure may be ions, atoms or molecules. They have a definite size, shape and charge.

Prizes were won as under:

Door: Mrs. Madeline Bettencourt and Jacqueline Ferris. Quiz: Mrs. Gladys Fortner and Sherman Ferris.

Further consideration of field trips was postponed until a period of more settled weather.

Harold Butcher
P.O. Box 937
Prescott, Ariz.

Wichita Gem & Mineral Society

Fifty-four persons interested in earth sciences met at Wichita, Kansas, Sunday, January 27, 1952, to organize The Wichita Gem and Mineral Society. It is the third such club in the state. A. C. Carpenter, Ottawa, Kansas, well-known in the rockhound fraternity, assisted with organization details and gave a talk on the subject, "This Hobby of Geology."

The following were elected to office: Stephen B. Lee, president; Brace A. Helfrich, vice-president; Mrs. Walter J. Broderson, secretary; J. Walter Fisher, treasurer. The fourth Sunday afternoon was selected as the regular meeting time. A balanced schedule of programs and field trips to serve all branches of interest is being planned. Several will attend the Rocky Mountain-American Federation of Mineralogical Societies convention in Canon City, Colorado, June 26-29, 1952.

Mrs. Walter Broderson, Sec'y
2439 N. McLean Blvd.
Wichita 12, Kansas

1000 Oaks Mineral & Gem Society

The 1000 Oaks Mineral and Gem Society will hold their first annual display at the Art Barn, in 1000 Oaks, April 26 and 27, 1952. The Art Barn has started a rock museum and these rocks will be on display for the first time during the show.

D. M. Lidster
Box 147
1000 Oaks
Calif.

Chicago Rocks and Minerals Society

The first meeting of the new year for the Chicago Rocks and Minerals Society was held Jan. 12, 1952, when there was "A conducted tour back to the coal forest" with Mrs. Theron Wasson of River Forest, Illinois, as guide. This unique illustrated talk backward in time through the Cenozoic, Mesozoic and Paleozoic cycles was made without any discomfort to the receptive audience, because of the charming, easy way in which Mrs. Wasson delivered the lecture. Several specimens of fossil ferns of the ancient forest were on display for discussion.

Miss Selma Jenner displayed some of her unusually fine collection of rocks and minerals which held much interest before and after the meeting.

Bertha J. Alberts, Publicity
310 Washington Blvd.
Oak Park, Illinois

Keene Mineral Club

It was a bright warm June day when our club members were to meet at 10:00 o'clock, at the Blake House, to go to Winchester, New Hampshire, for rhodonite on Stony Mountain.

No one in our club knew just where to go, for Stony Mountain covers quite an area. In due time five cars of rock hounds left Keene. On arriving in Winchester we were directed to the home of a young lad who had been all over this mountain and had found a ledge in which occurred brown rhodonite.

After leaving our cars, taking our lunches, we started for the mountain The first part of the way was a dirt road, dusty but very easy for walking. This was partly in the woods and partly where an early spring forest fire had swept over the land. The mountain had been burned over too, so you can imagine how we all looked by the time we came back down the hill to our cars. Everything we had touched seemed to be blackened by the fire. We certainly were a sight, but we all came back with specimens in our bags to show the trip had not been in vain.

Toiling ever onward, step by step;
Up the hill they go — to reach the top.
An old mine dump upon the crest
This is the rock hound's goal.
Hope is the lash that drives them on,
A toiling in the sun — ever onward
Until the top is reached,
For this is the rock hound's goal.

Mrs. Julian Wetherbee
22 Wheelock St.
Keene, N. H.

North Country Mineral Club
(Plattsburgh, N. Y.)

The North Country Mineral Club held its first meeting of 1952 on Jan. 10th in the class room of Dr. Kenble Widmer, professor of geology and mineralogy at Champlain College in Plattsburgh, N. Y.

Dr. Manwell, the outgoing president, presided at the opening and proceeded to have election of officers for the ensuing year with the following results:

President, Mr. Channing Mould, Keeseville. N. Y.; Vice President and Chairman of program committee, Mr. Wm. Ellsbury, Keeseville, N. Y.; Secretary, Mrs. C. V. Hale, Plattsburgh, N. Y.

The meeting then proceeded with Mr. Mould presiding and after a few words of acceptance he introduced the speaker of the evening, Dr. Widmer, who gave a most interesting talk on "Crystallography." Some of us had a hard time keeping up to his rapid description of crystals and their mathematical relationships.

Those present then examined the splendid collection of minerals used by the geology department which Dr. Widmer had arranged on display.

A unanimous applause signified the Club's appreciation for this splendid talk and we hope to hear more from Dr. Widmer at future meetings.

A inquiry from a New Jersey club asking for our cooperation on locating rocks up in this section this summer is being tentatively considered and we hope to make this trip possible at this end for their pleasure.

Our metings are held on the 2nd Thursday of the month.

Mrs. C. V. Hale
3 Peru St.
Plattsburgh, N. Y.

Pomona Valley Mineral Club

The Pomona Valley Mineral Club held its regular monthly meeting on January 8, 1952, in Room 8, Chemistry Building, Pomona College, Claremont, California.

Mr. Jerry Laudermilk was the speaker and the subject was "Rocks from Hades." The talk was ably demonstrated with rocks from the aforesaid place.

With the aid of the blackboard, Mr. Laudermilk kept the chalk flying describing to the audience the theory of the earth's interior and the origin and structure of volcanoes.

It was a profitable evening well spent and enjoyed by all who attended.

J. LeBrun
Publicity Chairman

Los Angeles Lapidary Society

The Los Angeles Lapidary Society's March speaker was member Carl T. Wood, in an interesting and informative lecture on "Lost Wax Casting".

He is a Dental Technician and has had the opportunity to experiment in this field and pass on the information to his fellow members.

He demonstrated the lecture with blackboard drawings, showing the process from beginning to finished product, also having on display the different materials and tools used, the casting machine, firing oven, and a sample of the wax mold and finished mold of a pair of gold leaf earrings.

Claire Schroeder, Pub. Chairman
Los Angeles Lap. Society
P. O. Box 2184, Terminal Annex
Los Angeles 54, Calif.

The Rockland County Mineral and Gem Society

At our November 30th, 1951, meeting, Lester W. F. Peper was elected president; Chester Pomeroy, Vice President; Anne Safranek, Secretary-Treasurer; John H. Weitmann, John W. Rooney, and William Rode, Directors.

We had a very successful meeting. Five new members joined the club. We have chosen the last Friday of every month for our meetings and the Finkelstein Memorial Library is our permanent meeting place in Spring Valley, New York.

Anne Safranek, Sec'y
Camp Hill Road
Pomona, N. Y.

Pacific Mineral Society

A fine detailed account of a year's trip to Africa, covering almost all of the rich and famous mineral areas, was Mr. George Burnham's gift to the Pacific Mineral Society at our Christmas meeting.

From Cairo, he flew to Kampala, Victoria and Nairobi; some good cassiterite and kyanite crystals were obtained, resulting from these stops. In Mozambique, tourmaline, zircon and manganese ores were found.

Next to Rhodesia, where silver, gold, copper, iron and coal mines were visited. Rhodesia is second in chrysotile deposits, and first in chromite. Some lenses here range from 150 to 540 feet in length. Most ore comes from the Selukwe deposits, and occurs in talc, schist, and serpentine.

The border town of Massina in northern Transvaal, yielded descloisite, chalcotricite, chrysocolla and bloodstone. In the Pietersburg-Lyndenburg belt, platinum is associated with sulfides of nickel, iron and copper, and palladium is always present. Here corundum was being screened from the soil by women workers.

The gold fields of South Africa are the world's chief producers. Pre-Cambrian auriferous conglomerates carry gold in the Witwatersrand district.

In the Barbarton area unusual blue amosite and crocidolite occur. At Livingston, the Broken Hill mine yielded excellent mimetite and smithsonite.

Mr. Burnham visited the Kimberly and other diamond belts and reports that they are not doing surface work. North to Brazzaville and Leopoldville, dioptase and mimetite were collected. He was permitted to explore many of these mines and had the pleasure of uncovering some good concentrations of collecting material.

The monthly display had some unique quartz crystals from Tsumeb, Africa.

January Meeting

The following officers were unanimously elected at the January meeting: President. Mr. A. R. Zwaschka; First Vice Pres., Mr. Guy F. Morris, Jr.; Second Vice Pres., Mr. G. A. Broderick; Secretary, Mrs. Gladys T. Eales; Treasurer, Mr. Russell C. Doak; Field Trip Chairman, Mr. N. L. Martin; Director, Mr. J. R. Hecox.

Dr. P. A. Foster, our exhibit chairman, gave us a good descriptive story of the Mohave Desert of California, which he illustrated with Kodachrome slides. Following the San Andreas fault, we saw Elizabeth Lake and other small bodies of water which have resulted from the upheavels. Other pictures gave us interesting examples of folding and tilting, including some in wonderland of Red Rock Canyon.

Good views of the basaltic lava, columnar structure near Little Lake, the Cambrian period Argus mountains, with Mesozoic intrusions, and the fairly recent, explosive type, cinder cone of this area added to our enjoyment of the eternally fascinating Mohave Desert.

Many of the less common small animals and insects paraded for us and their weird behavior was described. The flowers of Mohave and their adaptations and remarkable beauty excited our admiration.

Finally the sand dunes of Death Valley reflected the delicate blue of the morning, the vivid orange of noon and the rose of the evening.

Mr. Clark brought some of his desert collection, the "desert rose" was exceptional and some of the quartz family very beautiful.

Our field trip will be in search of Tantalite, Columbite, and other pegmatite minerals, in the vicinity of Rincon Springs, Calif.

February Meeting

The electron microscope, its construction and possibilities, was brought to us by Mr. Jack L. Taylor of the Cal-Tech Jet Propulsion Laboratory at the February meeting.

We saw vanadium pentoxide, manganese oxide, carbon black and diatomaceous earth photographed with magnification of from 7000 x to 60,000 x, with three dimensional properties very clear. The crystal habits and the molecular structure of various minerals were shown.

Some of the difficulties are frequent destruction of the specimen due to the intense heat and other properties of the electron beam. The preparation of this specimen often requires several days. A film of colodion or silica is used on the material.

This work require indirect methods of procedure, as shadowing with a heavy metal, showing the surface in reverse, and a negative replica and the use of a defraction blotter. Minute latex spheres are used for calibration.

The electron microscope has been used in the United States since World War II, and was developed in Belgium and Germany in the thirties. Dr. Baker of the University of Southern California has contributed much to its use. In the study of clays it has proved most valuable.

Our New President, Mr. A. R. Swaschka, assumed office. The field trip Chairman, Mr. Guy Morris, entertained with his "Rock Hound Miles" covered by the Pacific Mineral Society this year. He assured us that they equalled six and one-half trips to New York or one and six-tenths times around the earth at the equator. There were ten trips.

Mr. Harold Eales exhibited some of his new specimens, outstanding were rhodesite from Madagascar, neptunite and joaquinite.

The next field trip will be to Ashley's Gem mine near Pala, California. We hope for good specimens of lepidolite, tourmaline and spodumene, and perhaps other pegmatite minerals.

B. Royer
1234 W. 41st St.
Los Angeles 37, California

Glendale Lapidary and Gem Society

5th Annual Exhibition May 17 and 18, 1952
Civic Auditorium, Glendale, California

This year's $1,000,000 exhibit will consist of: Approximately 50 lighted cases of Gems, Jewelry, and Minerals, all displayed by the Society members; A desert flower and driftwood display arranged by the Society; Several special exhibits of outstanding material and workmanship; and Commerical displays of lapidary equipment and available material in rough, semi-finished, and finished form.

Among the various special displays will be included: The now famous Lincoln Sapphire; valued at ¼ million dollars; the Star of Queensland, the largest star sapphire in the world, valued at $250,000; a 500-carat Aquamarine, the largest cut aquamarine of its color to come out of Brazil, and other rare gems all being exhibited by the Kazanjian Bros. of Los Angeles.

Mr. I. L. Chow of the Peking Curio Shop at Los Angeles, will exhibit one of the largest carved amethysts in the world, as well as several outstanding jade carvings from the Orient.

Displays by the members will cover the entire Lapidary, Gem, Jewelry, and Mineral fields. One display will consist of outstanding flat sections of petrified trees from Wyoming and Utah, a collection of amethyst geodes from Uruguay, and pink rhodochrosite from Brazil. Another will display faceted gems cut from over 22 different materials along with specimens of the rough material from which the gems were cut.

Gems cut from material such as sphalerite, scheelite, apatite and kyanite which are not usually cut will be shown.

The gem cut from scheelite weighs 10 carats, is colorless, but is quite brilliant because of its high index of refraction. Scheelite is the common name for calcium tungstate which is the raw ore from which the metal tungsten is extracted. Scheelite ore is rarely found in crystals of sufficient clarity and size for cutting gems.

Another will show the various stages in cutting and polishing a cabochon, a heart, and a cross from rough gem material — a practical demonstration of "From Rocks to Beauty." Another will consist of a minitature rural wood yard, wood pile, fence, and axe, all fashioned out of petrified wood. Another will consist of opal, cut, uncut, mounted, and loose; matched beads; an opalized clam; 3 carved opals, one representing an elephant, one a horse's head, and one representing the Aztec sun god set in a gold ring of Aztec design. This came from Old Mexico many years ago.

Last year's show ended with an atendance of over 10,000. To better accomodate the visitors this year, the Society has rented the entire main floor of the auditorium. Members will be at the display cases to answer all questions in a spirit of friendliness. Everyone interested in this "America's fastest growing hobby" is welcome. *(Admission is free to all).*

Hours: May 17: 9 A.M.-9 P.M.
May 18: 9 A.M.-6 P.M.

Walter Kohn, Publicity
2241 Cambridge St.
Los Angeles 6, Calif.

Illowa Gem and Mineral Society

The Iowa Gem and Mineral Society met in their clubroom at the Davenport Public Museum Thursday night, Feb. 21, 1952, and made two very important decisions. The first one is that we will hold an exhibit, non-competitive, among the members during the entire month of May in the main rotunda of the Davenport Public Museum. And at the same time the Museum will hold the grand re-opening of the hall of rocks and minerals which has been all redecorated and new arrangements and display cases will be used.

All members displays will be placed in seven large plate glass cases, 3 feet wide and 9 feet long, with new tamper-proof locks. The displays will consist of gem material, agates rough and finished, cabochons, faceted stones, fossils, shells, minerals and equipment of all kinds.

Any bona fide dealer is cordially invited to send in a display of what he has for sale at no cost except he pay express charges both ways. This is a wonderful chance to advertise your product free of charge to interested persons because between 3,000 and 4,000 persons a month visit our large museum.

Any dealer that is interested may write me for details.

And the second great decision was that, because of the mounting number of complaints of being just plain "gyped" by unscrupulous dealers, we moved to keep a record of each such a case in a special book and also any dealer who is sure to give a fair deal and is obliging to his customers, will be recorded in our "Good Dealer Book." This information is confidential for members only. We will not record just a plain "gripe" but must have all letters and proof before going in "The Bad Book". We believe our members will have save many hundreds of dollars each year with this information to consult before ordering.

Irving W. Hurlbut, President
Illowa Gem and Mineral Society
2602 E. 32nd Road, R. R. 1
Davenport, Iowa

Hurrah for California!

Editor R & M:

I don't believe I have renewed my subscription so I am doing this today before I forget it. I sure want to keep my R & M coming even if I do live in California. I have been a subscriber for a number of years and think it is one of the best mineral magazines that has ever been published. So enclose is $3.00 as payment for another wonderful year of good reading!

Mrs.K. B. McClure
Feb. 28, 1952. Modesto, Calif.

PUBLICATIONS RECENTLY RECEIVED

The Diamond Saw and Its Operation, Wilfred C. Eyles. First Printing—Copyright 1951 by Lapidary Journal, Inc., Palm Desert, Calif. Paper covered booklet, 47 pp. text, $1.20.

For the amateur. "The Diamond Saw and Its Operation" is a valuable guide and reference work. The few serious mistakes which can ruin a valuable saw and that we of more experience have learned to avoid, are clearly delineated along with their remedies. If the rankest beginner were to buy this booklet along with his saw, he would find its value to be repaid in a short period of operation.

On the debit side, possibly unavoidable for a first attempt, the booklet is very brief and very short of illustrations. A firm framework has been erected for expansion into bigger and better editions however, and it is hoped that the sections on "Mineralogy As A Guide" and "Weight Pressures" will be more fully treated in future revisions.

In summary, "The Diamond Saw and Its Operation" is possibly most valuable to the beginner or the one who has never used a diamond saw before. It is of less value to the advanced lapidary who has already accumulated enough practical experience to successfully and efficiently perform the act of sawing. It is unfortunate that the booklet does not discuss the various designs of sawing machinery available on the market today since the machinery which ultimately drives the saw blade is scarcely less important than the blade itself. The amateur does not merely buy a saw blade, he buys the whole machine; he needs guidance not just for the blade, he needs it for the machine as a whole. J. S.

Introduction to Geophysical Prospecting: by Milton B. Dobrin.

Here is an interesting book for those who desire information on prospecting for minerals, oils, etc. Gravitational, magnetic, seismic, electrical, and radioactivity prospecting are treated, also well logging. Three chapters are devoted to such topics from "pure" geophysics relating to prospecting as earthquake seismology, terrestrial magnetism, and the gravitational field of the earth. In addition there are chapters on geophysical case histories (petroleum and mining), radio position location for geophysical work, and current research in pure and applied geophysics.

Some chapters that should be of special interest to our readers are those relating to magnetic prospecting, prospecting with the airborne magnetometer, electrical prospecting methods, prospecting for radioactive minerals (with geiger and scintillation counters), etc.

Published Jan. 21, 1952, by McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y. 435 pp., illus.—$7.00.

Theorectical Petrology: by Tom F. W. Barth.

Petrology is the science of rocks, treating of their origin, construction, etc. This book by Dr. Barth attempts to give a complete and logical presentation of principles and underlying theory of the petrology of the rocks of the earth's crust.

Theorectical Petrology is an exact and comprehensive scientific study of the rock-making processes, and an interpretation and synthesis of the existing quantitative data — the field data from all over the world, the experimental data from geophysical and geochemical laboratories, and the theoretical data of the research workers in geology, chemistry, and physics.

From these data — collected, organized, and interpreted — Dr. Barth sketches the cyclic history of the rock masses of the earth's crust; their origin, evolution, transfiguration, destruction and redevelopment.

The book is divided into 4 parts: Part I—Physics and chemistry of the earth (pp. 1-36); Part II—Formation of sedimentary rocks (pp. 37-60); Part III—Igneous rocks (pp. 61-245); Part IV—Metamorphic rocks (pp. 246-369).

Published Jan. 18, 1952, by John Wiley & Sons, Inc., 440-4th Ave., New Pork 16, N. Y. 387 pp., 146 figs., price $6.50.

Giants of Geology: by Carroll Lane Fenton and Mildred Adams Fenton.

This is a revised and enlarged edition of *The Story of the Great Geologists.* It is an intensely interesting story of the earth science throughout the lives of the men who developed it from early Greece to modern times; Thales, who was born in Greece about 636 B.C., is the first geologist noted in the book.

It is most remarkable what those early geologists accomplished, when we consider that there were no good roads, no autos, no maps, and no printed references, as we know of today. They were truly giants in their field and the world in general and geologists in particular are heavily indebted to them. No wonder, therefore, that they are held in great esteem, and the Fentons have presented their story in an intensely interesting and fascinating manner. Twenty-five photos of some of the world's noted geologists along with maps and diagrams add interest to the book. Published Jan. 24, 1952, by Doubleday & Co., Inc., 575 Madison Ave., New York 22, N. Y.—333 pp., 55 illus., price $3.50.

California Gem Trails: by H. C. Dake.

Dr. Dake has done it again — put out another book of interest to mineral collectors. *California Gem Trails* is a field guide for the gem hunter, the gem cutter, and the mineral collector. This is a second edition which has been revised and enlarged to include the whole state of California (the first edition, written by Darold J. Henry, came out in 1948).

This guide book with its many sketch maps should have a wide sale and we urge readers to order their copies immediately before the edition becomes exhausted. Remember Dr. Dake is the Editor of *The Mineralogist,* the West Coast's most popular magazine for mineral collectors, which is another hint that the edition will not last long.

Published February, 1952, by the Mineralogist Publishing Company, 329 S.E. 32nd St., Portland 15, Oregon—80 pp. illus., price $2.00.

Lake Superior Agate: by T. C. Vanasse.

This is a second revised edition of this popular little book whose first edition has had a wide sale and must now be exhausted. It describes the many agates in the author's collection which he found in the Lake Superior region, and the many nice photos of some of these agates add value to the book.

Published by The Sun, Spring Valley, Wisc., 66 pp., 46 illus., price $2.00.

J. J. Jewelcraft Issues New Catalog

J. J. Jewelcraft, 2732 Colorado Blvd., Los Angeles 41, Calif., has issued its new catalog, #3, devoted to lapidary equipment and supplies. It is a 40 page publication, profusely illustrated, and should have a wide circulation among cutters.

Burminco Releases Price List

Burminco, 128 So. Encinitas Ave., Monrovia, Calif., released early in March, 1952 a 4-page price list on minerals recently added to their large stock. Better order a copy while the minerals are still available.

Australian Bulletins

Western Australia Department of Mines, Perth, Western Australia, released recently Bulletin No. 5, *Moulding Sands,* by K. R. Miles and H. A. Stephens. This is 109 page publication, with tables and illustrations, on some moulding sands of the State.

Western Australia Geological Survey, Perth, Western Australia, released recently the following two bulletins:

Report of the Geological Survey for the Year 1948—80 pp. 22 pl., 6 figs.

Bull. 106—A geological reconnaissance survey of part of the area included between the limits Lat. 24° 0' S. and Lat. 29° 0' S. and between Long. 115° 30' E. and Long. 118° 30' E. including parts of the Yalgoo, Murchison, Peak Hill and Gascoyne goldfields, by W. Johnson. It contains 103 pp. 14 folded maps in color.

Canadian Bulletin Issued

Ontario Department of Mines, Toronto, Ont., Canada, has issued its 59th Annual Report covering the geology of the Keith-Muskego Township Area, by V. K. Prest.

Contains 44 pp., illus., with colored maps and plans in pocket.

Handbook for Uranium Prospectors Revised: Color Plates Picture Common Ores

A revised edition of the popular pocket-sized handbook for uranium prospectors, "Prospecting for Uranium," is available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. The booklet is jointly published by the U. S. Atomic Energy Commission and the U. S. Geological Survey. The price is 45c per copy.

For the first time there are shown, in the revised edition, eight color reproductions of common uranium bearing ores. The color photography was the work of Brookhaven National Laboratry. The new revision also includes latest official AEC price circulars, including Domestic Uranium Program Circular 6 providing for the bonus for initial production of uranium ores from domestic mines; and a compilation of public land orders listing tracts withdrawn from public use.

Information in this booklet is designed to answer all the common inquiries received by Government agencies as the result of the AEC's continuing program for domestic uranium production. Approximately 77,000 copies of the first edition were sold. Orders for the revised edition are being accepted by the Government Printing Office. There is a 25% discount available on lots of more than 100.

New Free Booklet

A new, 20 page manual outlining methods for the analysis of copper and lead by electroanalysis has been prepared by Eberbach Corporation, 200-208 E. Liberty St., Ann Arbor, Michigan, for distribution with its Electro-Analysis Apparatus. The methods and extensive bibliography are a product of research at Battelle Memorial Institute. Because this booklet can be helpful to all laboratories perform-

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Aid Rushed to Distressed Californian! — Another Copy Sent!

Editor R & M:

I have not received the Nov.-Dec. issue of R & M. I hesitate to write you about this before, ascribing the delay to postal mishandling. It may be that some postal employee is still reading the issue, but it should be forwarded on to me anyway before this.

Just in case it has gotten lost, would you be kind enough to send me another copy of the issue in question? It is no longer a habit to read ROCKS AND MINERALS, but has become a necessity. That's why I am concerned!

C. E. Snyder
Jan. 5, 1952. Paradise, Calif.

LOOKING BACK - - - -

Twenty-Five Years Ago in ROCKS AND MINERALS
March, 1927, issue

Two world-famous mineral collections donated to the Smithsonian Institute, by Peter Zodac, p. 23 The Frederick A. Canfield Collection of Mine Hill, N. J., and the Col. Washington A. Roebling Collection of Trenton, N. J., donated to the Institute, were briefly described.

Microscopic Rock Sections and Their Uses. A Fascinating Hobby, by E. P. Bottley, Derby, England, pp. 24-25. A short discussion on thin sections, with 1 illustration.

The Bottomless Pit, by Benjamin T. Diamond, p. 26. In the northern part of New York City, in the Bronx, there was once a deep black pit which seemed impossible to fill, no matter how much material was dumped into it. Because of its great capacity to absorb, it soon was known as "The Bottomless Pit."

Glassary Department, pp. 26-28. A list of various mining, mineralogical and geological terms, with explanation of each one.

Mineral Collectors and Others, by C. W. Hoadley, pp. 28-29. To Mr. Hoadley the Editor of R & M was deeply indebted. He not only was most generous with suggestions and advice but was also the first booster of ROCKS AND MINERALS. Being a member of the New York Mineralogical Society in which he had many friends, Mr. Hoadley used to circulate among the members and "demanded" that they subscribe. ALWAYS a booster for the magazine, and a warm friend, Mr. Hoadley's passing on Feb. 16, 1942, was a heavy blow to the Editor.

The Beginner's Cabinet. A department for young collectors, conducted by Ilsien Nathalie Gaylord, pp. 30-34. Mrs. Gaylord, who was intensely interested in young boys and girls, felt that a department for them should be in order. This department ran for many issues and it was a grand success, for she not only was gifted in writing for young people but to make minerals more interesting she donated prizes freely, furnishing the specimens herself. Mrs. Gaylord was a shut-in, but you would never have guessed this from her letters. She was not only our first subscriber—No. 1 in the record book—but she continued her subscription regularly up to the time of her death in 1949.

Some Rare Minerals from Nevada, by H. G. Clinton. pp. 34-35. Barrandite, variscite, vashegyite and dahllite were described.

Localities Department. This department, which ran through many issues, made its first appearance in this issue. Fine jasper in pebble-form from the south shore of Bear Lake, 3 miles south of Manawa, Wisc., and some minerals found at Jamestown, Colo., was briefly described.

Whittier Gem and Mineral Society

On November 18, 1951, Willis Bell led a party to the Winchester magnesite quarry at Hemet, California. Tourmaline, anthophyllite, talc, andalusite, and topaz are minerals to be found here.

At the meeting on Janury 3, 1952, George Burnham of Monrovia spoke to the Society on his trip through Africa. Entering the vast continent at Cairo, Egypt, the speaker traveled, mostly by plane, all the way to Johannesburg, then up the west side to Dakar. From there he went to Rio de Janeiro and through a portion of South America on his way back to the States. His talk was highlighted by many anecdotes regarding the dark continent, its people, its wild animals, and the troubles and tribulations encountered in this land, famous for its wealth of diamonds, its tiger-eye and Belgian Congo malachite. Some of the minerals obtained and a number of slides depicting its scenery and people were shown.

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